

Rock Products

DEVOTED TO
Concrete and Manufactured
Building Materials

Volume XII.

CHICAGO, ILL., JANUARY 22, 1913.

Number 7.

CAROLINA PORTLAND CEMENT COMPANY

We are the largest distributors of Portland Cement, Lime Plaster, Fire-brick and General Building Material in the Southern States, and have stocks of Standard Brands at all of the Atlantic and Gulf Seaports, and at our interior mills and warehouses, for prompt and economical distribution to all Southern territory. Write for our delivered prices anywhere. Also Southern agents for the "Dehydratline" waterproofing material. "Universal," "Acme" and "Electroid" Brands Ready Roofing. Get our prices.

Charleston, S. C. Birmingham, Ala. Atlanta, Ga. New Orleans, La.

DEXTER Portland Cement

THE NEW STANDARD

Sole Agents **SAMUEL H. FRENCH & CO.** Philadelphia



UNION MINING COMPANY

Manufacturers of the Celebrated

MOUNT SAVAGE

FIRE BRICK

GOVERNMENT STANDARD

DEVOTE a special department to the manufacture of Brick particularly adapted both physically and chemically to

Lime Kiln and Cement Kiln Construction

Large stock carried. Prompt shipments made. Write for quotations on Standard and Special shapes, to

UNION MINING CO.
Mount Savage, Md.
CAPACITY, 60,000 PER DAY
ESTABLISHED 1841

DURABILITY

STRENGTH

SUPERIORITY



TRADE MARK

Strongest Keene Cement Known

We solicit your patronage and promise your order will be loaded Promptly.

Our new booklet, "AMERICAN KEENE CEMENT," is just off the press. We should like to send it to you.

American Keene Cement Company
SIGURD, UTAH



CHICAGO BELTING COMPANY

PURE OAK TANNED LEATHER BELTING

RELiance and SEA LION WATERPROOF

CHICAGO BELTING CO., 113-125 N. Green Street, CHICAGO

Branches: New York, New Orleans, Portland, Ore., Los Angeles, Cal., Cleveland, Ohio.

Tannery, Niles, Mich.

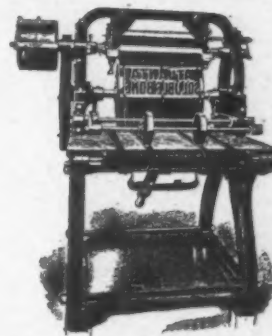


KOEHLER BAG PRINTER

is not only the fastest bag printer on the market---but the best and cheapest as well.

Write to us today for full particulars and prices. Hundreds of them in daily use giving perfect satisfaction.

The Henry L. Koehler Manufacturing Co.
410 W. Main Street, Louisville, Kentucky



Phoenix Portland Cement UNEXCELLED FOR ALL USES.
Manufactured by
PHOENIX PORTLAND CEMENT CO.
NAZARETH, PA.

Sole Selling Agent, **WILLIAM G. HARTMAN** CEMENT CO.
Real Estate Trust Building, PHILADELPHIA, PENNSYLVANIA.

Ottawa Silica Co.'s Washed White Flint Sand

Is used for sawing stone in more than a dozen states. Cuts more and lasts longer than any other sand on the market. Unexcelled for Roofing, Facing Cement Blocks, White Plaster, etc. Freight rates and prices on application.

OTTAWA SILICA CO.

Ottawa, Ill.

The Ironton Portland Cement Co.

Manufacturers of the
Celebrated Limestone Brand of Portland Cement

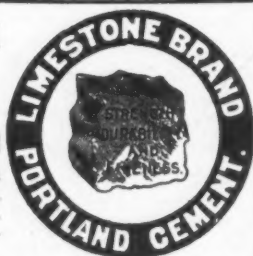
Used by the Railroads in Kentucky, Ohio, West Virginia, and Virginia during the past five years. Cement as finely ground as any on the market. Guaranteed to pass all the standard specifications.

Plant located at Ironton, O., within easy access to seven States, namely, Ohio, Indiana, Kentucky, West Virginia, Virginia, Tennessee and North Carolina.

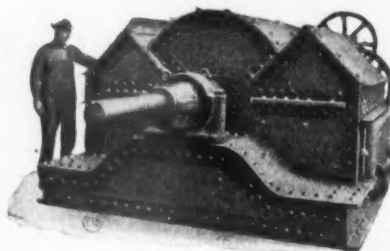
Shipments via the N. & W. Ry., C. & O. Ry., C. H. & D. Ry., D. T. & I. Ry., or Ohio River.

Write for Prices

The Ironton Portland Cement Co.
Ironton, Ohio



"PENNSYLVANIA" HAMMER CRUSHERS



For Pulverizing Limestone, Lime, Cement Rock, Marl, Shale, Etc.

Main Frame of steel, "Ball and Socket" Self aligning Bearings; forged Steel Shaft; Steel Wear Liners; Cage adjustable by hand wheel while Crusher is running. No other hammer Crusher has such a big Safety Factor.

PENNSYLVANIA CRUSHER CO.
Philadelphia
New York Pittsburgh



MILLS

Montreal	Port Colborne
Hull	Shallow Lake
Belleville	Maribank
Lakefield	Winnipeg
Calgary	Exshaw

For Prices Any Where in
CANADA
Write or Wire Our Nearest Sales Office

**Canada
Cement Company
LIMITED**

Montreal - Toronto
Winnipeg - Calgary



ONE GRADE—ONE BRAND

Alpha Portland Cement

Best in the World for
Sidewalks

Write for our Handsomely Illustrated Book. Sent Free.

General Offices: No. 7 Center Square, EASTON, PA.

—SALES OFFICES:—

The Oliver Bldg., PITTSBURGH.	Builders Exchange, BUFFALO.
Builders Exchange, BALTIMORE.	Board of Trade Bldg., BOSTON.
Harrison Building, PHILADELPHIA.	Hudson Terminal Bldg., N. Y.
National Bank Bldg., SAVANNAH, GA.	



Absolute Uniformity

In every sack on which is the Lehigh Label means a uniformly light color and uniformly high tensile strength in every job on which Lehigh is used. The fact that the same process is maintained throughout our eleven mills, in selecting, proportioning and testing our product from the first to the last stage of its manufacture, insures this uniformity. For the highest quality of concrete work use the most uniform cement, Lehigh.

Lehigh Portland Cement Co.
Allentown, Pa. Chicago, Ill.

Northwestern Portland Cement

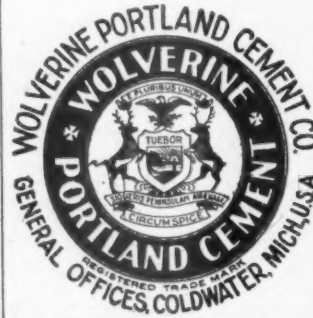


The Reliable Portland
Cement

A Portland Cement
for the

NORTHWEST

NORTHWESTERN STATES PORTLAND CEMENT COMPANY
MASON CITY, IOWA



"WOLVERINE"
The Alright Cement

MADE RIGHT SOLD RIGHT
WORKS RIGHT
WEARS RIGHT

The Best is None Too Good For You.
Insist Upon.

"WOLVERINE"

Write for Booklet and Quotations.
Factories at Coldwater and Quincy, Mich.
Capacity 3500 Daily.

WOLVERINE PORTLAND CEMENT COMPANY
W. E. COBEAN, Sales Agent,
Coldwater, Michigan Main Office, Coldwater, Mich.

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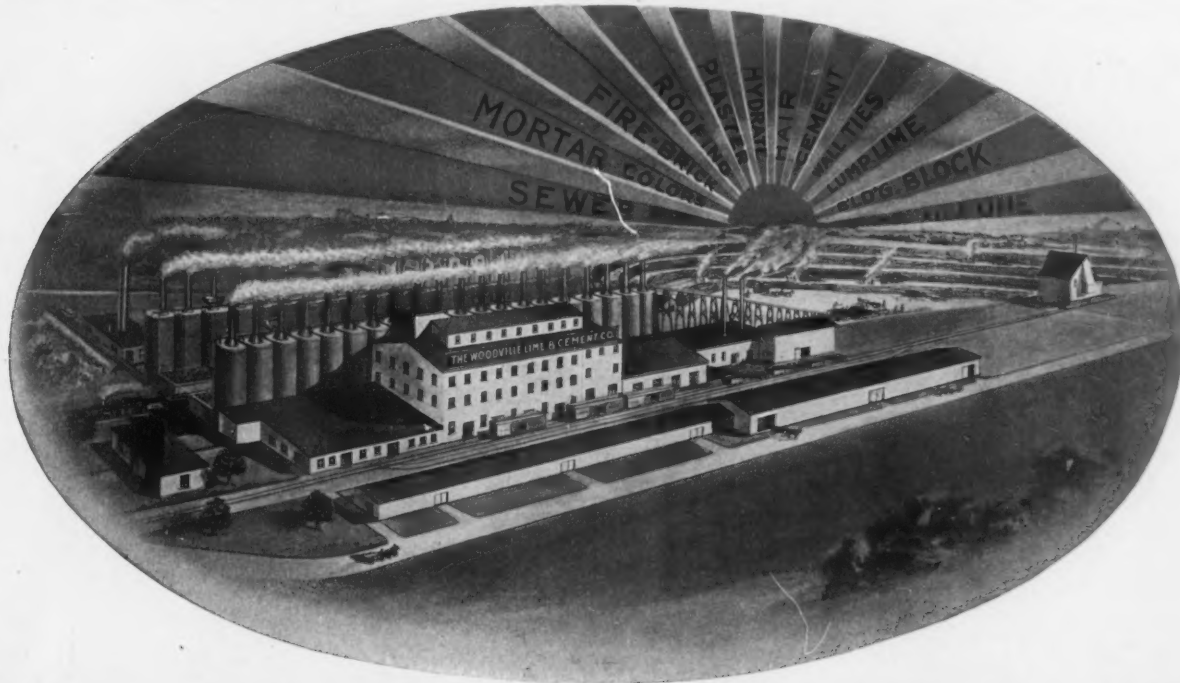
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"THE BEST UNDER THE SUN"

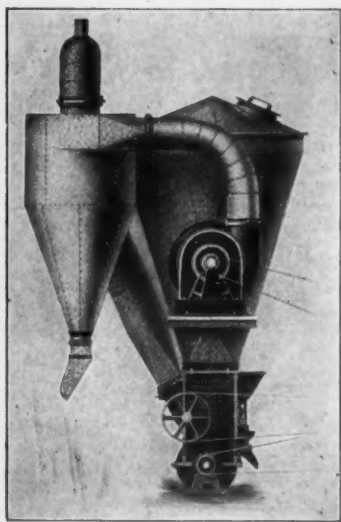
Manufacturers of

White Enamel Finish Hydrated Lime

White Lily Finish Hydrated Lime

EVERYTHING IN
BUILDING MATERIALS

The Woodville Lime & Cement Co., Toledo, O.



Raymond No. "0" Pulverizer and Air Separator with Cyclone Tubular Dust Collector

Raymond Dustless Grinders Pulverize to Fineness of Smoke

- ☛ No other known system of Pulverizing will grind so uniform or so fine a product as the Raymond Mill.
- ☛ No other system does away with so much useless and costly machinery and shafting.
- ☛ No other system requires so little power to run or maintain.
- ☛ No other system will separate so large a quantity of ground material per hour. The

RAYMOND PULVERIZING SYSTEM Air-Separating

separates by air suction which insures the uniformity of the mesh desired without the use of bolting cloths, reels or screens and their high maintenance cost.

☛ Every installation is studied to fit existing conditions in the plant.

Send for our Book which explains in detail what our system is and how and where it may be used.

Read this Book and you may find the way to divert some items from the expense account into the dividend account.

Raymond Bros. Impact Pulverizer Co.

517 Laflin Street, CHICAGO, ILL.

Designers of Special Machinery and Methods for Grinding, Pulverizing and Separating. Manufacturers of Automatic Pulverizers, Roller Mills, Vacuum Air and Screen Separators, Crushers, Special Exhaust Fans, Dust Collectors.

PLEASE CUT THIS OUT
REMINDER
Raymond Bros. Impact
Pulverizer Company,
517 Laflin Street,
Chicago

Dear Sirs: Please send us the Book explaining your modern money-saving method of Pulverizing and Air Separation.

24

Tell 'em you saw it in ROCK PRODUCTS

Start the New Year Right

WE RESPECTFULLY REQUEST
INVESTIGATION OF

The Giant Griffin Mill

Many of the largest cement manufacturers have installed them in all departments. Repeat orders assure us that they are meeting all requirements.

Low in Horse-Power, Economical in Upkeep, Large Output of Exceptionally Fine Finished Product

without use of auxiliary screens—are a few of the claims which we can substantiate.

MAY WE SEND LIST OF INSTALLATIONS
FOR INVESTIGATION?

BRADLEY PULVERIZER CO.

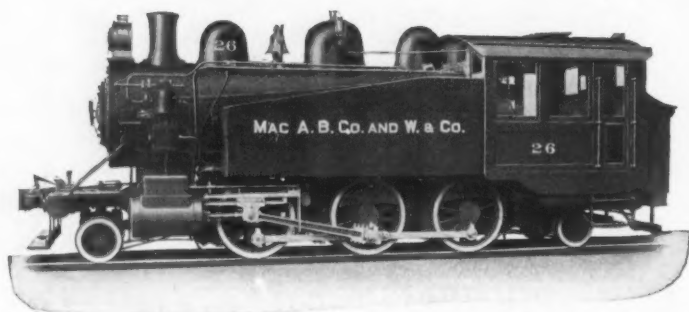
BERLIN, GER.

BOSTON

LONDON, ENG.



INDUSTRIAL LOCOMOTIVES



Care in manufacturing increases the life of a locomotive, increases your profits by decreasing cost of maintenance and repairs.

Back of the individual experience of our engineers is the record of over three-quarters of a century of continuous success in building locomotives.

From this experience has been learned what is necessary to increase the life and usefulness of this class of equipment.

Our engineers are qualified through long experience to co-operate with you in selecting the locomotive best suited for your work. Let us help you.

AMERICAN LOCOMOTIVE COMPANY

30 CHURCH STREET, NEW YORK

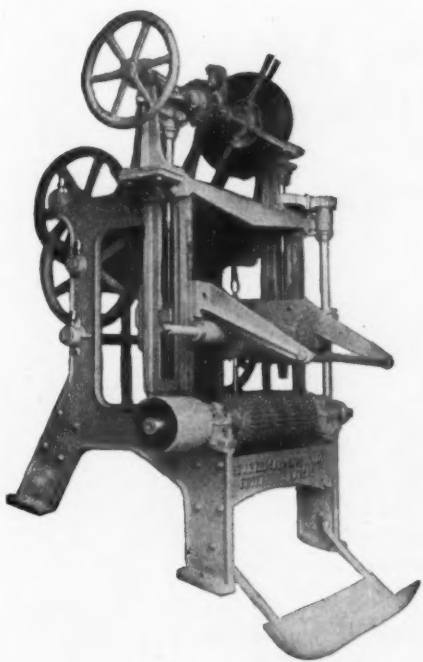
McCormick Building, Chicago

Dominion Express Building, Montreal, Canada

Standard Supply and Equipment Company, 1710 Market Street, Philadelphia, Pa.

N. B. Livermore & Company, Los Angeles; San Francisco; Seattle; Portland, Oregon

Call 'em, you saw it in ROCK PRODUCTS



Points of Interest Concerning The Ehrsam Wood Fibre Machine

The log feeds itself to the saw. As the log decreases in diameter the Speed of the log and of the feed **INCREASES AUTOMATICALLY**.

In other words, the Peripheral Speed remains constant.

The feed of the log to the saw is in direct proportion to the speed of the log. This automatic uniformity of feed **INSURES UNIFORMITY** of **FINE-NESS** in the **PRODUCT**.

No frictional devices are used, none being necessary.

All the working parts are planed. All of the gears are cut from solid steel. All of the parts are interchangeable and numbered, so that duplicate parts can be quickly obtained and easily put in position.

The Saw mandril is extra heavy and made of the best crucible steel.

The journals are chain oiling. No Machine can be more substantially built. Write for full information.

J. B. Ehrsam & Sons, Enterprise, Kans.

Gentlemen:—Some time ago I received a letter from you asking how the wood fibre machine you shipped us is doing. Will say it is the best I ever used. In regard to any suggestions I could make as to how it might be improved, will say that I can make none, as it is O. K.

Yours truly,

SOUTHWEST CEMENT PLASTER CO.

Okeene, Okla., June 14, 1911.

Frank Dodge, Sup't.

Manufacturers of Jaw and Rotary Crushers for Gypsum, Vibrating Screens,
Hair Pickers, Wood Fibre Machines, Calcining Kettles,
Plaster Mixers, Power Transmission

The Enterprise Vertical Burr Mill

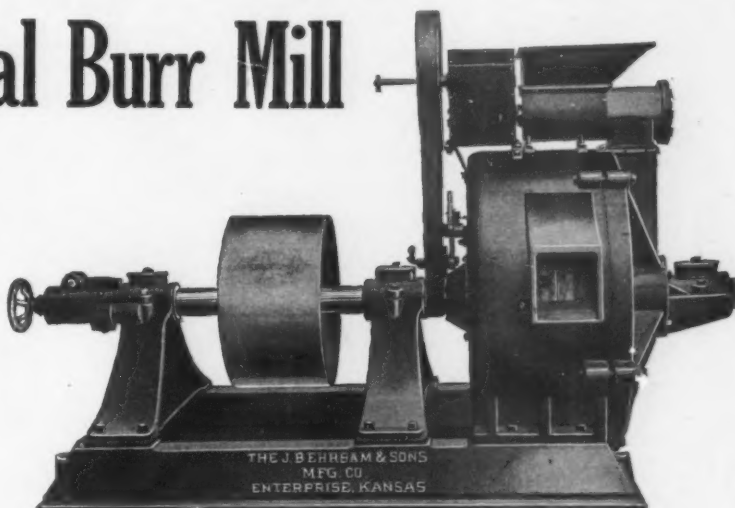
is especially designed for grinding gypsum, lime-stone, coal, coke, paint, rock, foundry facing, carbon, salt, and other similar substances.

It is **STRONG** and **DURABLY** built.

Has **INTERCHANGEABLE STONES**, which can be easily removed for dressing and replaced.

Is provided with our **POSITIVE CONTROLLABLE FEEDER**, which feeds an absolutely uniform stream into the mill at the required capacity.

**MANY OTHER
ADVANTAGES.**



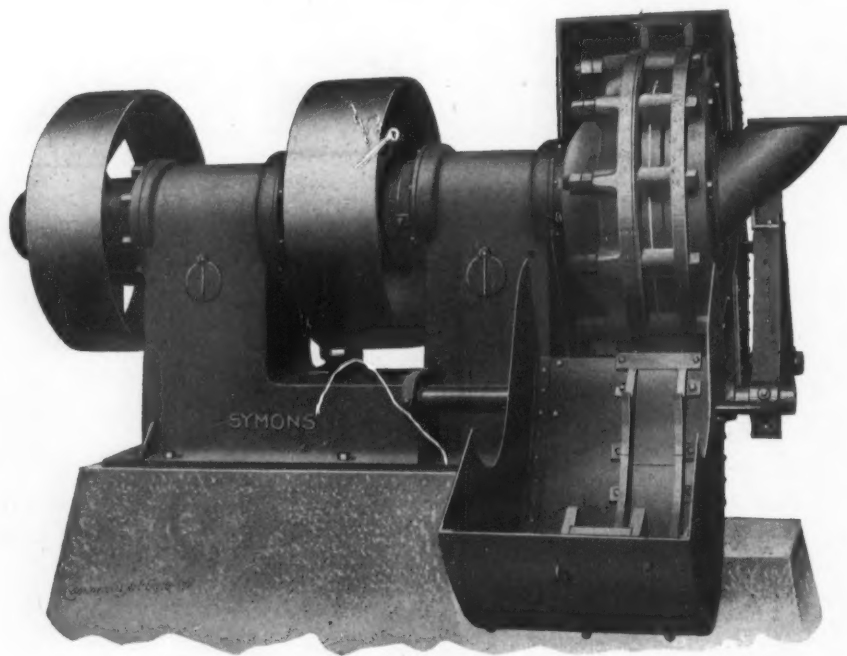
The J. B. Ehrsam & Sons Mfg. Co.

Designers and Builders of

Complete Equipment for Plaster Mills

ENTERPRISE, KANSAS, U. S. A.

Tell 'em you saw it in **ROCK PRODUCTS**



**Long Life
Large Capacity
Light Repair Cost**

VITAL POINTS

They characterize the Symons Disc Crusher

In three years its excellence has been established in all parts of the world.

The 48 in. size crushes 8 in. rejections to 1½ in. 60 to 75 tons per hour. Adjustable for smaller product. Inquire what other sizes do.

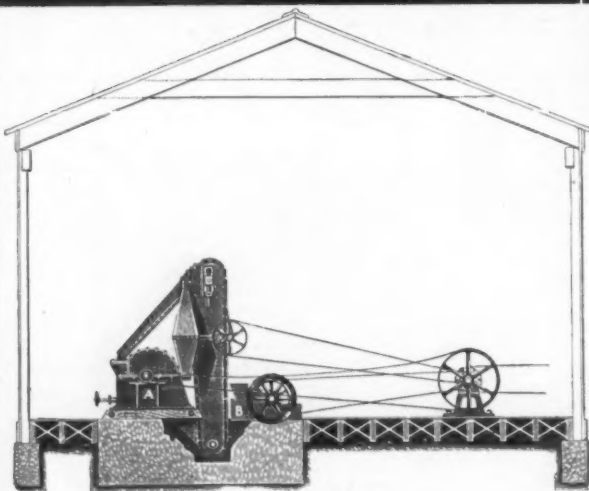
Watch a Disc crusher work. Ask the user!

ADDRESS

SYMONS BROTHERS COMPANY

605 Majestic Building

MILWAUKEE, WIS.



Stationary Plant

Get Into the Game

**GRIND YOUR LIMESTONE SCREENINGS
AND MAKE LIMESTONE FERTILIZER**

What Is Now a Dead Loss to Some Quarrymen
Can Be Turned Into Good Profits

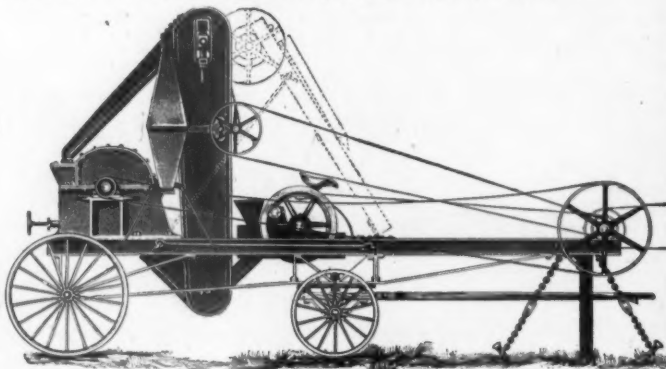
WE FURNISH COMPLETE PLANTS OF ANY CAPACITY DESIRED
Manufactured and Licensed under 87 Separate and Distinct Patents

We now have over 30 plants in operation

BULLETIN NO. 4 EXPLAINS THE
PROPOSITION

**The Williams Pat. Crusher &
Pulv. Co.**

ST. LOUIS 2705 N. Broadway
CHICAGO: Old Colony Bldg.
SAN FRANCISCO: 428 Monadnock Bldg.



Portable Plant

Tell 'em you saw it in ROCK PRODUCTS



Bay State Brick and Cement Coating

will protect all concrete or cement construction against damage by moisture, will retard fire, give your building any tint desired, may be used as a tint on brick or wood, is equally advantageous on stucco or concrete houses, in mill, bridge or sewer construction. Send at once for booklet No. 16.

It was used here:



KINGSBURY RESIDENCE
Orange, N. J.

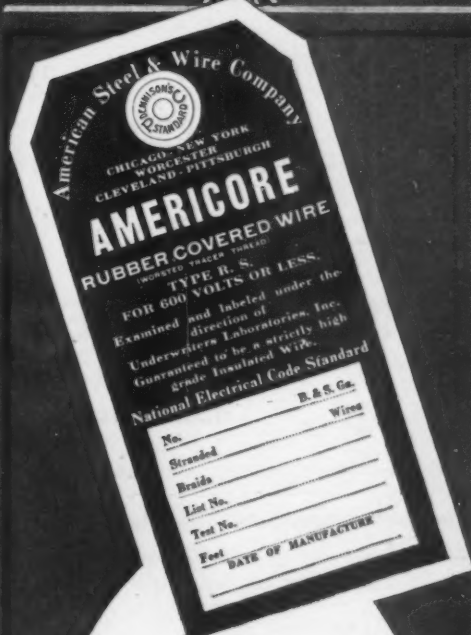
Frederick P. Kelley, New York Architect
One coat of Bay State Brick and Cement Coating used on exterior. Cement Floor Coating used on Porch Floors

WADSWORTH, HOWLAND & CO., Inc.

Paint and Varnish Makers and Lead Corroders,
82-84 Washington St.,
Boston, Mass.

New York Office, 156 Fifth Avenue

American Steel & Wire Company



The Blue and White Tag,
that does not merely announce a NEW CODE wire but justly proclaims "the" House Wire, that more than meets the requirements of the

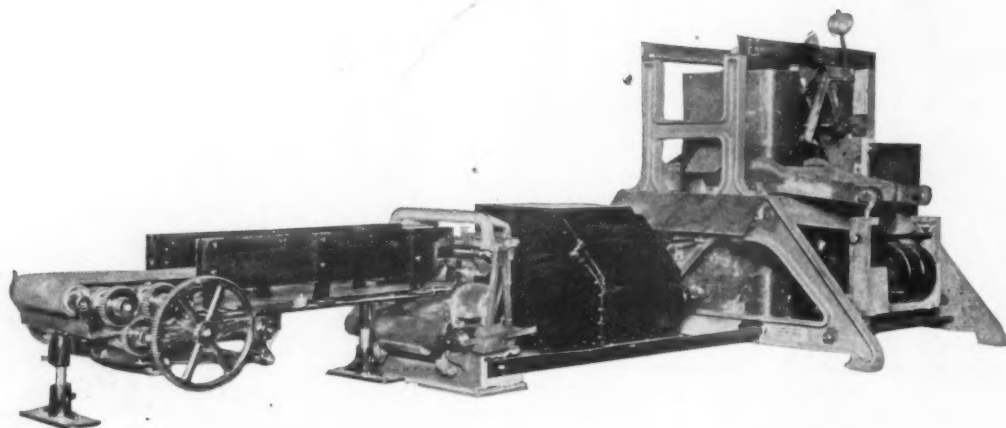
1911 NATIONAL ELECTRICAL CODE

Don't take our word for it; buy a coil and try it—then like hundreds of other discriminating buyers you will pronounce it the best!

American Steel & Wire Company SALES OFFICES

CHICAGO	13 W. Adams Street
NEW YORK	30 Church Street
WORCESTER	94 Grove Street
BOSTON	120 Franklin Street
PITTSBURGH	Frick Building
CINCINNATI	Union Trust Building
BUFFALO	327 Washington Street
CLEVELAND	Western Reserve Building
DETROIT	Foot of First Street
OKLAHOMA CITY	State National Bank Building
ST. LOUIS	Third National Bank Building
DENVER	First National Bank Building
ST. PAUL-MINNEAPOLIS	Flower Bldg., St. Paul
SALT LAKE CITY	Walker Bank Building

UNITED STATES STEEL PRODUCTS CO.
Export Dep't., New York, 30 Church St.
Pacific Coast Dep't., San Francisco,
Blaire Bldg.; Portland, Sixth & Alder
Sts.; Seattle, 4th Ave., South end
Conn. St.; Los Angeles, Jackson & Central Avenues



Cement of the highest quality is only made by the exact required proportions of

CLINKER AND GYPSUM

Your chemist, with this machine, will give the desired result

AUTOMATIC WEIGHING MACHINE COMPANY

134 to 140 Commerce Street, NEWARK, N. J., U. S. A.
439 Pierce Building, - ST. LOUIS, MO., U. S. A.

**Your Continuous Patronage Is the Best Evidence That
Our Material Is Satisfactory**

MAIL ORDER TO NEAREST
MILL FOR PROMPT SERVICE

The National Retarder Co.

— SUCCESSORS TO —
The Chemical Stucco Retarder Co.
Webster City, Iowa

The Ohio Retarder Co.
Port Clinton, Ohio

The Binns Stucco Retarder Co.
Uhrichsville, Ohio

Webster City, Iowa

Port Clinton, Ohio

Branch Office, Toledo, Ohio

Tell 'em you saw it in ROCK PRODUCTS

TISCO MANGANESE STEEL CASTINGS

FOR SEVERE SERVICE

TAYLOR-WHARTON IRON & STEEL CO.
HIGH BRIDGE, NEW JERSEY

Don't forget to write for our folder

"White Strip Leather Belting in Cement Mills"

CHICAGO BELTING COMPANY

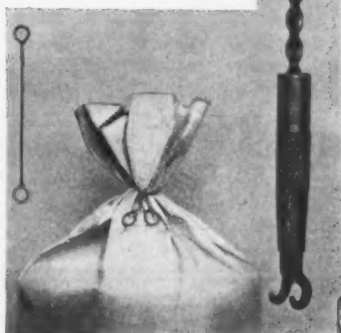
113-125 North Green Street.

Chicago, Illinois

Wire Ties Give Absolute Security

to
the
Bags

Simple



Tying
Tools
Loaned
for
Thirty
Days
Free
Trial

Rapid

No sore hands. No skilled labor.
Untied with thumb and finger.
No cut bags.

The Curry Bag Tyer

No experiment. Two and one-half years' service in hundreds of plants.

Catalog E and Prices

CLIFFORD L. MILLER & CO. SOLE AGENTS
110 E. 234 St., NEW YORK

We have begun suit against a maker and seller of a similar tool and are prepared to enforce our rights against all infringements.

Breaker Shafts

Crystallization



is the cause of the breaking of most crusher shafts and is the result of severe, continued and frequent shocks.

To prevent this trouble we have developed special "anti-fatigue" steel shafts which are oil tempered and heat treated.

These shafts are forged in our own shops which contain special equipment for the purpose, including one of the most powerful hydraulic presses ever built, the use of which assures a homogeneous forging.

These shafts are slow to show crystallization under the severest crushing conditions and will outlast any shaft ever before manufactured.

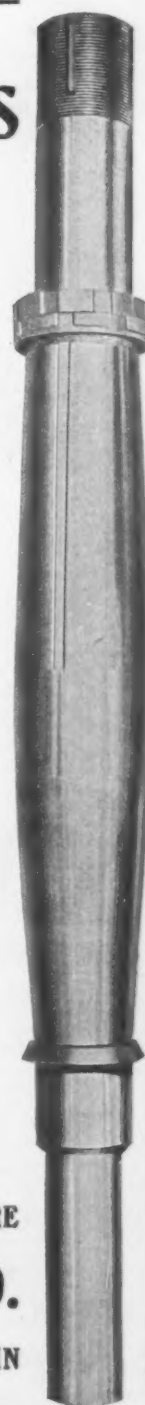
The greatly increased length of life of these shafts make them much more economical than the ordinary shaft even at the higher first cost.

For

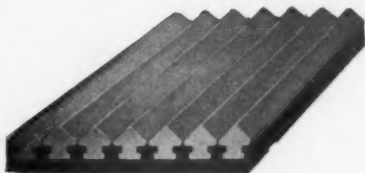
TRAP ROCK GRANITE IRON ORE

ALLIS-CHALMERS CO.

MILWAUKEE WISCONSIN



A Tempered Steel Jaw Plate for Blake Type Crushers



Adamantine Tempered Steel Crusher Jaw Plate
Patented March 31, 1908

The "Adamantine" Tempered Steel Jaw Plate for Blake Crushers is composed of Forged and Rolled Chrome Steel Bars, cast-welded and also mechanically interlocked into a backing of tough steel—and the wearing face is tempered to extreme hardness. We are equipped to supply both corrugated and smooth face plates for all sizes and makes of Blake Crushers.

This method of cast-welding forged and tempered steel bars into a mild and tough Steel Backing, is adapted also to the construction of Cone Heads for Gyratory Crushers, Segments for Corrugated Rolls, etc., etc.

Our products in this line are sold with our special guarantee that they *will wear longer, give better satisfaction and, at our price, prove more economical than any others now on the market.*

—Send for Descriptive Pamphlet—

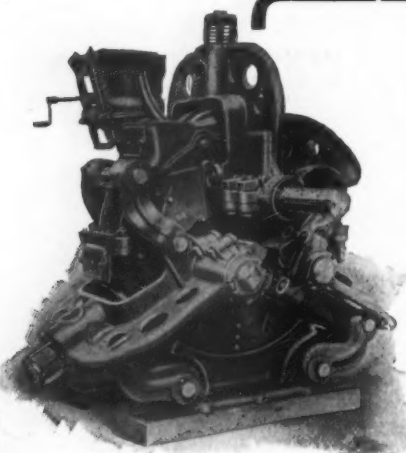
Represented by

J. F. Spellman, First National Bank Building, Denver, Colo.

George W. Myers, Kohl Bldg., San Francisco, Cal.

CHROME STEEL WORKS
CHROME, N.J., U.S.A.

Tell 'em you saw it in ROCK PRODUCTS



MAXECON

Means MAXimum of ECONom

Years of experience with the assistance of our hundreds of customers has found THE SOLUTION OF GRINDING HARD MATERIALS. The MAXECON PULVERIZER combines highest EFFICIENCY, greatest DURABILITY and assured RELIABILITY. Uses the LEAST HORSE POWER per capacity. Embodies the features of our Kent Mill with improvements that make it MAXECON.

WE DO NOT CLAIM ALL of the CREDIT for this achievement

We have enjoyed the valuable suggestions of the engineers of the Universal Portland Cement Co. (U. S. Steel Corp.), Sandusky P. C. Co., Chicago Portland C. Co., Marquette Cement Mfg. Co., Western P. C. Co., Cowham Engineering Co., Ironton P. C. Co., Alpena P. C. Co., Castalia P. C. Co., Pennsylvania P. C. Co., any many other patrons.

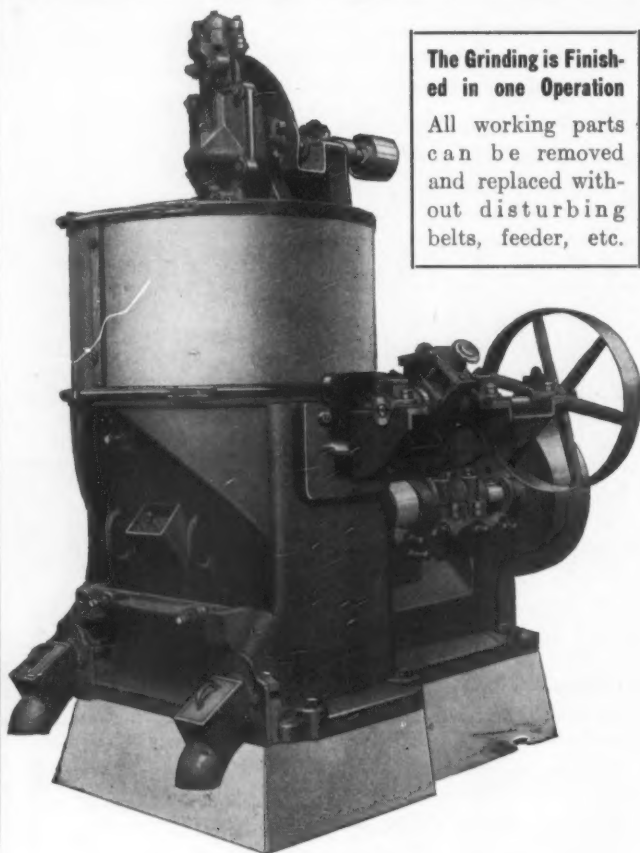
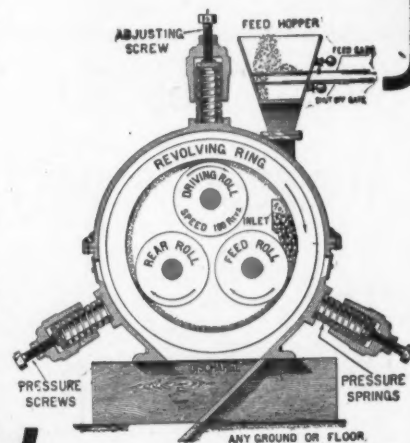
THE RING WOBBLES

The FREE WOBBLING POUNDING RING instantly and automatically ADAPTS its position to the variations of work.

Its GRINDING ACTION is DIFFERENT than any other; besides the STRAIGHT rolling action of the rolls, the SIDE to SIDE motion of the ring makes the material subject to TWO crushing forces and DOUBLE OUTPUT results.

KENT MILL CO.

10 RAPELVEA ST., BOROUGH OF BROOKLYN, N. Y. CITY
LONDON, W. C., 31 HIGH HOLBORN
CHARLOTTENBURG 5, WINDSCHEID STRASSE 31, BERLIN



The Grinding is Finished in one Operation

All working parts can be removed and replaced without disturbing belts, feeder, etc.

BONNOT PULVERIZER

Grinds and Screens Limestone, Raw Lime and Hydrated Lime

Does it at One Operation. Gives You Any Desired Fineness

GRINDING LIME IS LARGELY A SCREENING PROPOSITION. THE BONNOT PULVERIZER HAS THE LARGEST SCREENING SURFACE AND CONSEQUENTLY THE GREATEST CAPACITY.

NO OTHER MACHINE LIKE IT IN THE ACCESSIBILITY OF SCREEN AND GRINDING PARTS.

No. 4 Catalog Explains These Advantages

THE BONNOT COMPANY

909 N. Y. Life Bldg.
KANSAS CITY, MO.

CANTON, OHIO

Tell 'em you saw it in ROCK PRODUCTS



AUSTIN GYRATORY CRUSHERS

Made in Eight Sizes

50 to 5000 Tons Per Day

Plans and Specifications submitted and expert advice free on any problems involving rock-crushing or earth-handling.

AUSTIN MANUFACTURING CO.

CHICAGO

New York Office: 50 CHURCH STREET

Canadian Agents: MUSSENS, Ltd., Montreal

We manufacture:—Road and Elevating Graders, Scarifiers, Road Rollers, Quarry Cars, Dump Wagons, Stone Spreaders, Street Cleaning Machinery.



BOOKS FOR THE TRADE

Cement Users

- The Uses of Hydraulic Cement**
Frank Harvey Eno. Price \$1.00
- Portland Cement for Users**
Henry Faija and D. B. Butler. Price \$1.20
- Cements, Mortars and Concrete**
Myron C. Falk. Price \$2.50
- Reinforced Concrete**
W. H. Gibson and W. L. Webb. Price \$1.00
- Concrete System**
F. B. Gilbreth. Price \$5.00
- Hand Book of Cost, Data**
Halbert P. Gillette. Price \$4.00
- Concrete Construction**
H. P. Gillette and C. S. Hill. Price \$5.00
- Cement Workers' and Plasterers' Ready Reference**
H. G. Richey. Price \$1.50
- Notes on Testing and Use of Hydraulic Cement**
Fred P. Spalding. Price \$2.00
- Reinforced Concrete**
A. W. Buel and C. S. Hill. Price \$5.00
- Concrete**
Edward Godfrey. Price \$2.50
- Reinforced Concrete**
C. F. Marsh and Wm. Dunn. Price \$7.00
- Practical Treatise on Foundations**
W. Patton. Price \$5.00
- Concrete**
Thomas Potter. Price \$3.00
- Cement and Concrete**
Louis C. Sabin. Price \$5.00
- Practical Reinforced Concrete**
H. B. Andrews. Price \$2.00
- Concrete and Reinforced Concrete Construction**
Homer A. Reid. Price \$5.00
- Handbook on Reinforced Concrete**
F. D. Warren. Price \$2.50
- Sewers and Drains**
Anson Marston. Price \$1.00
- Concrete**
Edward Godfrey. Price \$2.50
- Popular Handbook for Cement and Concrete Users**
Myron H. Lewis & A. H. Chandler. Price \$2.50

Cement and Lime Manufacturers

- Bungalows, Camps and Mountain Houses**
Price \$2.00
- Manufacturer of Hydraulic Cement**
A. V. Bleininger. Price \$1.25
- Limes, Cements and Mortars, Concretes, Mastics, etc.**
G. R. Burnell. Price \$0.60
- Portland Cement; Its manufacture, testing and use**
David B. Butler. Price \$5.00
- Instructions to Inspectors on Reinforced Concrete Construction**
Geo. P. Carver. Price \$0.50
- Lime, Mortar and Cement**
A. I. Dibbin. Price \$2.00
- Cements, Limes and Plasters**
Edwin C. Eckel. Price \$6.00
- Practical Treatise on Limes, Hydraulic Cements and Mortars**
Gen. Q. A. Gillmore. Price \$4.00
- Mortars, Plasters, Stuccos, Concretes, Portland Cements and Compositions**
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Arvid Reuterdahl. Price \$2.00
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ROCK PRODUCTS, 537 South Dearborn Street, CHICAGO



There's one "best" in every line, but that is not always best for everyone concerned. In the building trades

Ricketson's Mineral COLORS

are acknowledged to be the best choice for everybody. Best for the architect because purest. Best for the contractor because they go farther. Best for the owner because they never change their color.

For Mortar, Brick, Cement, Stone, Etc.
Red, Brown, Buff, Purple and Black

RICKETSON MINERAL PAINT WORKS MILWAUKEE, WIS.

IMPORTANT Advertisers—Take Notice

Changes of Copy

Must be in this office by the Thirteenth of the month, if proofs are desired, if no proofs are required the desired changes can be made if copy is received by noon of the Seventeenth.

New Advertisements

To insure proper classification, should be in this office by the Fifteenth of the month, but they can be inserted in the last form going to press if received by the Nineteenth. The punctual publication of the paper admits no deviation from these rules. Advertisers are earnestly requested to co-operate with us.

The Francis Publishing Company
537 South Dearborn Street, Chicago, Ill.

Tell 'em you saw it in ROCK PRODUCTS

Quick Lime in Cold Weather

Many contractors prefer quick lime in the winter months. It slakes readily. It is unnecessary to heat the water or dry out the sand.

This is the time for dealers to make arrangements WITH US for their supply.

MITCHELL LIME combines all the good qualities desired by contractors:

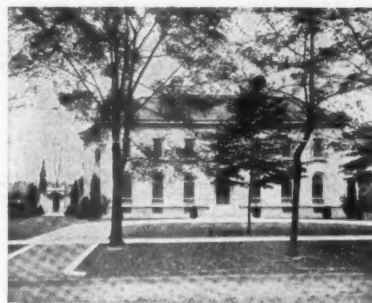
It slakes fast;
It yields more putty;
It lays more brick;
It spreads easy;
It makes the strongest mortar.

Your orders will be taken care of promptly. Two plants and two railroads give quick service.

Mitchell Lime Company

528 Peoples Gas Building
CHICAGO, ILL.

Works:
Mitchell, Indiana



Residence Mrs. John Hay, Cleveland
"Tiger Brand" White Rock Finish Used Throughout.

**Good
Business
for
1913**

THE dealer who handles Tiger Brand White Rock Finish will do a good lime business next year. Architects in every part of the country are specifying this hydrated lime for their finest work and for the largest building jobs.

"Tiger Brand" White Rock Finish

The sales are large and made at a good profit.

It is an easy line to handle because the slaking has already been done. The packages will not heat or burst and the material will not deteriorate no matter how long it is kept.

The builder is always satisfied because he gets a clean, white wall which will not "pop" or "blister".

The demand for this perfect finishing lime will be greater than ever in 1913.

Are you an agent?

The Kelley Island Lime & Transport Co.

CLEVELAND, OHIO



Waste Means Loss of Money

WASTE means that you are reaching down into your pocket and meeting leaks that should not exist. For more than seven years we have been expounding the merits of

Monarch Hydrated Lime

As a result, thousands of contractors will use no other. They have learned by experience that it more closely approaches perfection than any other lime, because there is absolutely no waste.

They know that it requires no screening.

That it takes more sand; gauges with one-third less plaster and spreads farther and easier than lump lime.

These are features that are causing thousands to use Monarch Hydrated Lime. Are you one of this number?

The
National
Lime &
Stone Co.
CAREY, OHIO



Only
One
Dealer
in Your
District
can get it—
Why Not You?

When
He gets
it he will
have the
best there is.
Again we ask
Why Not You?

**The SATIN SMOOTH and
SNOW WHITE
FINISH**

"WHITEKOTE IS THE RIGHT COAT"

Tell 'em you saw it in ROCK PRODUCTS

The Ohio and Western Lime Company

WORKS AT
Huntington, Indiana
Marion, O.
Gibsonburg, Ohio
Pestoria, Ohio
Sugar Ridge, Ohio
Tiffin, Ohio
Genoa, O.
Limestone, Ohio
Lime City, Ohio
Portage, Ohio
Luckey, Ohio
Bedford, Ind.

MANUFACTURERS OF AND WHOLESALE DEALERS IN

Ohio and Indiana White Finishing Lime, Ground
Lime, Lump Lime, Fertilizer Lime, Hydrate
Lime, Cement, Plaster, Hair, Etc., Etc.

Capacity
8000 Barrels
Per Day

MAIN OFFICE: Huntington, Ind.

Branch Office: Marion, Ohio.



BANNER HYDRATE LIME

That Made Gibsonburg, Ohio, FAMOUS

MANUFACTURED BY THE

NATIONAL MORTAR & SUPPLY CO.
PITTSBURG PENNSYLVANIA

CROWN HYDRATE

HIGH CALCIUM HYDRATED LIME

At present prices you can waterproof, improve the color and strengthen the texture of all cement construction and actually **save money** because the Hydrate **replaces** the same amount of cement (15 to 25%).

Kritzer Vacuum Process

MARBLEHEAD LIME COMPANY

KANSAS CITY

CHICAGO

TO THE TRADE

We take this means of extending our thanks and appreciation to our many customers for the very liberal patronage bestowed upon us during the past year. We wish you a busy and prosperous year during 1913. We have increased our facilities and will be ready to care for the greatly enlarged demands made upon us. Write or wire us for prices.

SCIOTO LIME & STONE CO.

—DELAWARE, OHIO—

Tell 'em you saw it in ROCK PRODUCTS

HYDRATED LIME

Its Marvelous Increase In Consumption

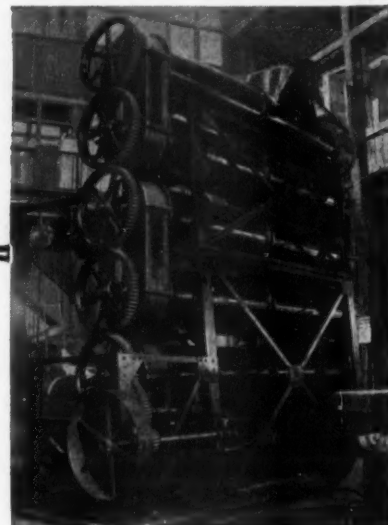
*Why Dealers Handle Hydrated Lime, and
Why Hydrated Lime Consumption
Has Increased 33 $\frac{1}{3}$ % Annually
During the Past 4 Years*

BECAUSE the Dealer finds he assumes no risk of loss in handling it. It does not deteriorate if kept in stock an indefinite length of time. Is a more satisfactory product to the trade and complaints and allowances to contractors cease. Contractors using it once, become constant buyers and users, increasing the dealer's volume of business as well as his profits. A better market is gained and a steadier all around business is enjoyed. Also a wider range of trade reached by the live dealer. This is verified by the marvelously annual increased consumption of hydrated lime throughout the country and the continual enlarging of capacity of Hydrated Lime Plants made imperative for manufacturers to supply the demand. The annual decrease in the use of quick lime and a greater increase in the use of hydrated lime has been seen by the live dealer and, the opportunity quickly grasped by him handling and pushing the product, giving him bigger profits and extending the scope of his business without risk of loss. Hundreds of dealers are yearly falling into line, now regretting not having handled hydrated lime before this.

The Kritzer Way is the **Right Way** for making hydrated lime as every progressive lime man in the country will tell you. 97 per cent of all ideas in hydrating lime are Kritzer ideas.

All of our installations are proving commercially successful.

The Kritzer Company
Chicago, Ill.

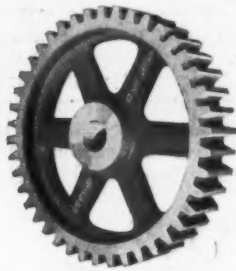


KRITZER CONTINUOUS PROCESS

WELLER-MADE

Handling rock and other heavy materials, requires the correct kind of elevating

and conveying machinery. And it's our business to supply just that kind of equipment. Ask our engineering department for suggestions on suitable machinery to suit your conditions. Their advice costs you nothing. Full descriptions of our entire line are in catalog No. 20. Write for a copy.



Gears



Bearings

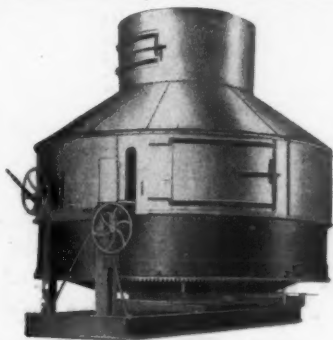
Our Power Transmitting Machinery is well known for its thoroughness of construction and efficiency in operation. We will gladly give you estimates on Gears, Bearings, Friction Clutches, Sprockets, and complete equipment for Rope Drive Systems, etc.



Belt Conveyors

The durability of Weller Belt Conveying Systems makes them distinctively desirable for handling rock, stone, ores, slag, cement and other heavy materials with the minimum labor cost. The wide variety of styles and sizes enables our meeting your requirements exactly.

Weller Mfg. Co., Chicago



Clyde Hydrator with Hood
"The common sense way".

Don't Buy Hydrated Lime

at random; **specify "Clyde Process" Hydrated Lime.** The material that has the qualities **you** want, either as a consumer or a dealer. The presence of this **quality** has enabled Clyde operators to sell 90% of the Hydrated Lime used in America. Insist on getting "Clyde Process" Hydrated Lime, it will put snap into the appearance of your work, it will ginger up a sick selling organization. If your dealer or producer doesn't carry this material, send us his name, we will tell you where you can get it in your neighborhood. We furnish complete "Clyde Process" Hydrating plants with capacities from 1 ton an hour up. Interesting booklets for the asking.

"The Man that put QUALITY into Hydrated Lime."

H. MISCAMPBELL, Duluth, Minn.

Patentee and Sole Manufacturer of Clyde Hydrators

BUFFALO WIRE WORKS CO.

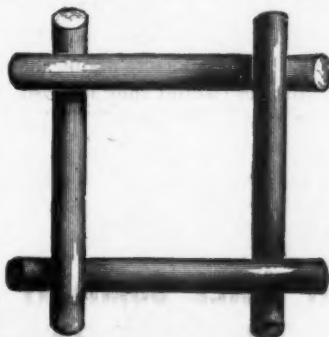
BUFFALO, N. Y.

We make

Wire Cloth

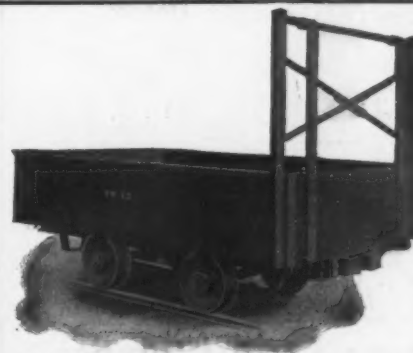
From the coarsest to the finest, for all purposes,
Also

WIRE CONCRETE REINFORCEMENT, WIRE WORK of all kinds, CORRUGATED WIRE "LATHING"



1-Inch Space, No. 4 Wire

Send for Our No. 416 Catalogue.



"INDUSTRIAL"

The Quarry Cars That Give the Service You Want

Carefully designed and built to give the longest and most satisfactory service under the severest exactions of quarry usage. There is an Industrial Car for every purpose and each is the best of its kind to be had.

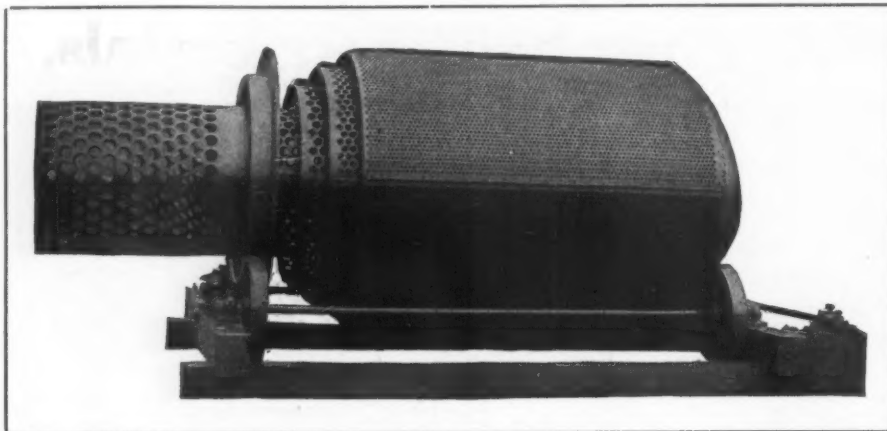
Illustrated Catalogue on Request. Write

The Electric Locomotive & Car Co.

West Park, Ohio

Tell 'em you saw it in ROCK PRODUCTS

JOHN O'LAUGHLIN'S SCREEN



The advantages of these screens are described in detail in a circular which WE WILL MAIL TO ANY ADDRESS. Mr. John O'Laughlin, the inventor, has designed many notable improvements in rock-drilling, quarrying, crushing and screening machinery, and uses these improved screens in his own crushing plants, which others have declared "to be the most perfect in existence in every detail." The O'Laughlin Screen is an important factor in the most modern and perfect stone-crushing plant.

made solely by Johnston & Chapman, is the

ONLY SCREEN

on the market for wide-awake quarry-men and miners, who want to separate crushed granite, limestone or other minerals, gravel, sand, coal or coke. It will soon earn its cost in saving of repairs, and maintenance, and reduced power, and will do more and cleaner work than any other cylindrical screen of like area. No one can afford to keep old traps in use when the O'Laughlin installed

NOW

will from the moment it starts give a better and larger product, and a big interest on your investment in continuous saving in cost of repairs, renewals, and power. For particulars address:

JOHNSTON & CHAPMAN CO.

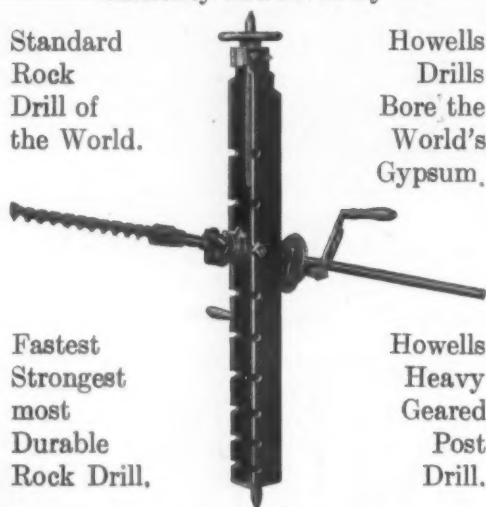
Corner Francisco and Carroll Ave., Chicago, Ill.

Perforators of Sheet Metals, Flat, Cylindrical, and Conical Perforated Screen Plates for Quarries, Mines, Reduction Works, Mills and all Industrial Purposes.

HOWELLS DRILLS

for all purposes where drills are required. Combine efficiency and economy.

Standard
Rock
Drill of
the World.



Howells
Drills
Bore the
World's
Gypsum.

Fastest
Strongest
most
Durable
Rock Drill.

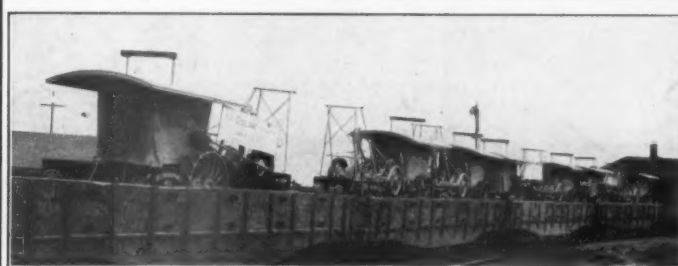
Howells
Heavy
Geared
Post
Drill.

Thousands of these drills doing duty everywhere—speak for themselves.

These drills have a record—can't be beat. Will drill from five to seven inches per minute in gypsum or soft rock.

We make over 40 different kinds of Auger Drills, operated by Hand, Electricity and Air.

Howells Mining Drill Company
Plymouth, Pa., U. S. A. :: Write for Catalogue No. 88 today



Big Blast Hole Drills for Quarries

WHEN you hear Big Drill and Quarry mentioned together it means a Cyclone Drill—they are one and the same thing; it is the machine that is effecting a saving of from 25 to 75% in producing stone.

The largest quarry installation in the United States, the largest in Canada and the largest in Europe is made up of Cyclones. There's a reason—would you like to know it?

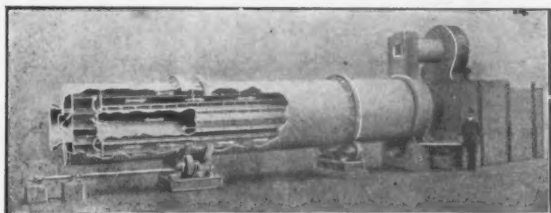
Suppose we send you, say, twenty letters from men who have installed these drills and tell in these letters about the savings effected in their various quarries; would they interest you? Shall we send them? They may tell you something which will start dollars rolling your way.

Just remember that you are competing against the other fellow's cheaper production. Do you recognize the man who is really paying for the modern equipment?

THE CYCLONE QUARRY DRILL COMPANY
New York Office, 50 Church Street
Chicago Office, 418 Hartford Bldg. **ORRVILLE, OHIO**

Tell 'em you saw it in ROCK PRODUCTS

Sand and Gypsum are dried at the lowest *ultimate* cost in **Ruggles-Coles Double Shell Dryers**



at a large number of plaster, brick, and cement plants, over half a hundred Ruggles-Coles Dryers being used for this service. At a recent test at a large plaster plant the Ruggles-Coles Dryers showed an efficiency of 81.1%, the exhaust was only 90° F., and the fuel cost of drying 2½ cents per ton.

Ruggles-Coles Dryers are also built to dry cement rock, clay, marl, chalk, coal, organic materials, etc., etc. Over 14 years' experience makes us capable of drying anything. Send for booklet "What We Dry."

Send us a sample of your product and let our engineers figure on your requirements

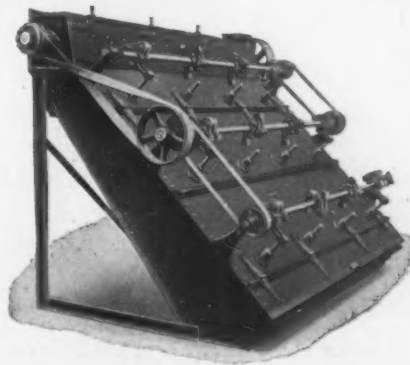
Ruggles-Coles Engineering Co.

CHICAGO OFFICE
McCormick Building

(37-99)

50 Church Street
NEW YORK

NEWAYGO SCREEN



SCREENS EVERYTHING SCREENABLE

from 4 to 180 mesh.

Less than 1 H. P. to operate. Large Output.

More in use than any other Screen.

From 1 to 78 used by single concerns.

SOLD ON "SALE OR RETURN" CONTRACT

If not satisfactory, even to the color of the paint, may be returned, as per our special "Sale or Return" offer.

Send for Offer and Catalogue.

STURTEVANT MILL CO., Boston, Mass.

NEW YORK 114 Liberty St. PITTSBURGH 530 Park Building CLEVELAND Am. Trust Building CHICAGO 1116 Fisher Bldg. ATLANTA 1410 Candler Bldg. LONDON 147 Queen Victoria St., E. C.

AETNA

40 per cent Aetna Gelatin is the best explosive for breaking hard rock in wet or dry work, because it contains within a given space the greatest amount of rending power at the right speed for rock breaking. Waterproof, dense, uniform.

THE AETNA POWDER COMPANY

7 SOUTH DEARBORN STREET, CHICAGO

Bank of Commerce Building
ST. LOUIS, MO.
Knoxville, Tenn.

33 North High Street
COLUMBUS, O.
Chattanooga, Tenn.

Woodward Building
BIRMINGHAM, ALA.
Iron Mountain, Mich.

Mass. Building
KANSAS CITY, MO.

Terry Building
DULUTH, MINN.

Xenia, Oh

Tell 'em you saw it in ROCK PRODUCTS



FOUR-TRACK REINFORCED CONCRETE BRIDGE, BEREA, OHIO.
NEW YORK CENTRAL LINES

MEDUSA GRAY PORTLAND CEMENT

CELEBRATED FOR ITS UNIFORM COLOR AND STRENGTH
GUARANTEED TO PASS AND SURPASS STANDARD SPECIFICATIONS

Over 100,000 barrels of Medusa Portland Cement
used by the United States Government in the
construction of breakwater at Cleveland, Ohio

Write for free illustrated booklets and samples of

MEDUSA GRAY PORTLAND CEMENT
MEDUSA WHITE PORTLAND CEMENT
MEDUSA WATERPROOFING
MEDUSA WATERPROOFED CEMENT
(GRAY AND WHITE)

Sandusky Portland Cement Co.
SANDUSKY, OHIO

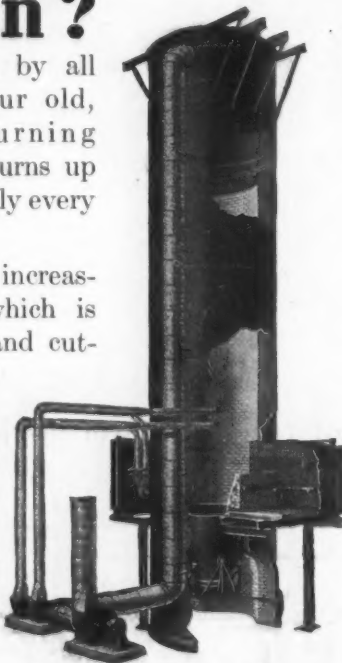


Have You Money to Burn?

If you have, continue by all means to use your old, inefficient lime burning equipment, which burns up good money needlessly every day you run it.

But if you are of that increasingly large class which is investigating costs and cutting them where they can—post yourself on the Doherty Lime Kiln.

You cannot afford to ignore the saving in cost and improvement in quality which you could realize with Doherty Kilns.



Write for Bulletin No. 4—"Lime Kilns and Equipment."

Improved Equipment Co.
Combustion Engineers
EXECUTIVE AND SALES OFFICES
60 Wall Street, NEW YORK

DIRECT HEAT DRYERS

—FOR—

**BANK SAND
GLASS SAND
ROCK, CLAY
COAL, ETC.**

All Mineral, Animal and Vegetable Matter.

We have equipped the largest plants in existence and our dryers are operating in all parts of the world. Write for list of installations and catalogue S. C.

American Process Company
68 William Street, NEW YORK CITY

THE CUMMER DRYERS

For Mechanically Drying Everything. The F. D. Cumer & Son Co., Cleveland, O.



WORRELL'S ROTARY DRIERS

(First Efficient Rotary Fire Driers Built)

**DIRECT OR INDIRECT HEAT,
FOR SAND, CLAY, CRUSHED ROCK, GRAIN**
and other granular or fibrous matter. High Efficiency, Durability and Simplicity.

IMPORTANT: In sending for prices and printed matter state your required hourly capacity, approximate % moisture in your product, etc.

S. E. WORRELL

Established 1879

209 Center St.

HANNIBAL, MO.

Farnam "Cheshire" Lime Co.

OF CHESHIRE, MASS.

MANUFACTURERS OF THE

Celebrated Cheshire "Finishing" Lime

Well known throughout New York and the Eastern States as the finest finishing lime manufactured. The special feature of this lime is its quick and even slacking, thus preventing any cracking or checking when put on the wall. It is the best lime used in the country today for all

HIGH GRADE FINISHING WORK

Selling Department, 39 Cortlandt St., N.Y., C. J. CURTIN, Pres't.

Tell 'em you saw it in ROCK PRODUCTS

Rock Products

ESTABLISHED IN LOUISVILLE, KY., 1902.
DEVOTED TO CONCRETE AND MANUFACTURED BUILDING MATERIALS.

Volume XII.

CHICAGO, JANUARY 22, 1913.

Number 7

THE FRANCIS PUBLISHING COMPANY

EDGAR H. DEFEBKAUGH, Prest.
Seventh Floor, Ellsworth Bldg., 537 South Dearborn St., Chicago, Ill., U. S. A.
Telephone Harrison 8086, 8087 and 8088.

EDITORS:

EDGAR H. DEFEBKAUGH.

FRED K. IRVINE.

Communications on subjects of interest to any branch of the industry are solicited and will be paid for if available.
Every reader is invited to make the office of Rock Products his headquarters while in Chicago.
Editorial and advertising copy should reach this office at least five days preceding publication date.

TERMS OF ANNUAL SUBSCRIPTION.

In the United States and Possessions and Mexico.....\$1.00
In the Dominion of Canada and all Countries in the Postal Union..... 1.50
Subscriptions are payable in advance, and in default of written orders to the contrary, are continued at our option.
Advertising rates furnished on application.

Published on the 22nd of each month.

Entered as second-class matter July 2, 1907, at the Postoffice at Chicago, Illinois, under Act of March 3, 1879.

Copyright, 1913, by E. H. Defebaugh.

Higher efficiency should be the standard for advancement of salary.

Walt Mason says that if Ananias lived today and kept store he could not keep the wolf away from his creaking door.

Just what we need nowadays is fewer politicians and a little more attention to our own business and the world will move on in natural sequence.

The man who sits with his feet upon the desk waiting for business to come to him is like the man on the milk stool in the middle of the pasture—the cow never comes to him.

Finance and Commerce.

The money situation as the year 1913 opens is unusually sound. The atmosphere is practically free from anything like a speculative mania, and business in all lines, particularly throughout the great Middle West, is well sustained with expansive tendencies. In spite of all the "money trust" agitations and inquisitions the settled opinion of the people stands in support of the fact that American banks, as a rule, are conducted just as safely and conservatively, just as intelligently and energetically, and with just as keen a desire to efficiently serve their customers as the banks of any other country in the world. The excess of exports over imports in the year 1912 has amounted to more than \$500,000,000, which of itself makes a very strong position in the international money market, and insures the movement of gold into American banks from abroad to circulate amongst our industries at the opening of activities in 1913.

Railroads have a big lot of long deferred improvement work, and the big industrials have the completion of extensions already begun which will call for immense quantities of every conceivable kind of supplies. All of this is in addition to the regular "flow of the country," and it runs up into hundreds of millions, which can be and will be financed under ordinary arrangements of accommodation. The regular supplies of prosperous times will be the measure of each individual operation from farm and forest, from quarry and mine, to the factory and mill, in addition to a goodly propaganda of public improvement, such as road building, river and canal improvement, and the extension of public institutions.

There is no need for alarm by reason of the change of administration at Washington. Let us consider the commerce of this country too great and too important to be trifled with by the new

Democratic and Progressive politicians. The incoming President is the type of man who says, "Let's be sure we are right before we go ahead." That means no sudden or ill-advised changes will be made in tariff schedules or anything else having a tendency to disturb the well regulated stride of prosperity now prevailing. It is idle to suppose that such men as the President is calling into his counsels will lightly look upon the gravity of their public trusts. In fact, the new administration is more certain to proceed slowly and cautiously than the old party would have done, backed by all the assurance of having already done pretty well. No, don't let Washington worry you in the least.

The same old solid bank, with the banker's pleasant word of courage, will greet you again in 1913, and the makings of another big profit year is right before you.

When It Comes to Circulation Rock Products Leads Them All.

Dear Folks:—Our personal invitation to advertisers may not reach every man who reads and thinks, and in this busy rush we don't want any one to feel slighted or overlooked.

In order that you may appreciate the advertising value of the distribution of the information we published in 1912, we hand you the results of the compilation of our complete circulation statistics just finished for your consideration.

Total number of papers published and distributed, 146,281. Average commercial rating of total list, \$65,300, representing a purchasing power of more than one billion of dollars. This represents the total quantity and all of the quality of the building material interests of the country.

We have never desired to offer advertising particularly upon a quantity basis, but here is quantity—near about the 100 per cent limit. We rather aim at quality, and reach the principal people in the trade—the buyers who are the best payers; and to assist our readers at every opportunity to achieve greater success in the industry.

In all the Southern cities, including New Orleans, Memphis, Chattanooga, Birmingham, Atlanta, Louisville, Nashville, etc., the paper is read by nine men to every one who reads all other publications of the trade. The same average comparison checks out in all the cities and principal towns on the New York Central line. In Ohio and Indiana the result of personal canvass shows six of our papers to all the others, and the same proportion is practically carried out in all the principal purchasing cities where building materials are distributed.

A sworn statement covering these circulation facts will be furnished to advertisers on application.

Where did these papers go? To all of the noticable factors in the following lines: Cement, lime, plaster, crushed stone and gravel operators; distributors and dealers of building materials, including lime, plaster, cement, sand, gravel, crushed stone for road work, ballast, flux; together with manufacturers of cement blocks, contractors of concrete construction and cement work, architects, contractors, contracting plasterers, engineers of construction work, engineers maintenance of way of railroads, purchasing agents, road builders, roofing, mixers of mortars, chemists, testing engineers of railroads and industrial plants, highway commissions, construction boards of municipalities.

The main object of **Rock Products** as a publication is to assist meritorious industries and create new branches in the building material industry that will consume the products of rock.

Rock Products,
E. H. Defebaugh, Pres.

EDITORIAL CHAT

COMING ASSOCIATION MEETINGS.

National Builders' Supply Assn., Grunewald Hotel, New Orleans, La., January 30 and 31.

National Paving Brick Manufacturers' Association, March 3-4-5, Green Room, Congress Hotel, Chicago, Illinois.

Nebraska Cement Users, Auditorium, Omaha, Neb., February 4, 5, 6, 7, and 8.

New England Builders' Supply Association, New American House, Boston, Mass., February 20.

Ohio Builders' Supply Association, Southern Hotel, Columbus, Ohio, February 13 and 14.

FORD'S ANNUAL MIGRATION.

W. H. Ford, general manager of the sales of the Canada Cement Company, Ltd., Montreal, has been striking the long trail from Montreal to Vancouver, and visiting with all of the supply dealers in between. Whenever it gets to be about the 15th of November, Ford vividly recollects an icicle that he once saw in Quebec which blockaded the St. Lawrence river so as to block navigation. His conversation was so frozen on that occasion that it was impossible for him to buy a ticket for his native city of Charleston where they only have ice of the manufactured variety, so before the Americans on this side are getting their Thanksgiving turkeys dressed he is off for the Pacific slope where the balmy breezes from the South make living a treat. That is the end of his operations which become interesting about the time the north pole moves into Montreal for a three months' visit.

Mr. Ford was daily expected to appear at the Cement Show in Chicago on his return trip, for he has not been in the United States so that anybody could notice it since the time of his mysterious disappearance from the Good Roads Convention at Atlantic City last summer, where he left the bunch to drag the ocean for his body, due to the signs of distress he made when last seen.

One of his representatives was at the Chicago Cement Show and was expecting Mr. Ford most any time, which does not alter the case, for Ford shot a big bull moose up in the Hudson Bay preserves just about the 15th of November, which may account for some things which happened on this side of the border.

SUCCESSFUL CONTRACTOR BRANCHING OUT.

James S. Murray, New Kensington, Pa., has operated successfully for a number of years as a sidewalk contractor, and he has earned high reputation for the good work he has done in the line of concrete foundations. At the recent Pittsburgh Cement Show he purchased the outfit exhibited by the Fisher Hydraulic Ramming Machine Company, with a view to making high-grade material for the construction of the walls of buildings, so as to take care of the entire mason specifications on any and all building jobs that come up in the thriving suburb of Pittsburgh. Mr. Murray will equip a complete plant for the manufacture of cement products at New Kensington. He has a large business in the contracting line and the confidence of the community as a practical builder.

UNIVERSAL MAKES CHANGES.

The Universal Portland Cement Co., of Chicago, has made the following changes in its personnel: John C. Berquist, works manager, has resigned that position and will hereafter act in the capacity of consulting engineer; Leonard Wesson, superintendent of plant No. 2, South Chicago, has been transferred to the general office to assist President Edward M. Hagar in matters relating to appropriations, construction and operation. Mr. Wesson will have the title of assistant to president. Nels Nelson, who has been assistant superintendent of plant No. 2, will take Mr. Wesson's position as superintendent.

DEATH OF ARTHUR ST. JOHN NEWBERRY.

It is with deep regret that we announce the death of Mr. Arthur St. John Newberry, president of the Sandusky Portland Cement Co., Sandusky, Ohio, which occurred a short time ago. Mr. Newberry for years had been a prominent figure in the cement trade and his passing away will be sorrowfully mourned by the host of friends he leaves behind. Mr. Newberry died at his home in Cleveland from pneumonia after a period of uncertain health for several years. His death, however, was unexpected, as he seemed to be much stronger during the past summer and autumn than he had been for some time. He was born in Cleveland, graduated from Harvard University in 1876 and studied and practiced law for a number of years in that city.

Mr. Newberry was 58 years of age and was active in the organization of several important industries. The Sandusky Portland Cement Co. was organized by him in 1892 and he served as president of that concern up until the time of his death. He was married in 1880 to Miss Paige Eells, of Cleveland, and is survived by his widow



THE LATE A. ST. JOHN NEWBERRY

and three children, John S. Newberry, Mrs. Richard Hooker of Springfield, Mass., and Miss Mary Newberry; and by three brothers, S. B., R. T., and W. B. Newberry.

A TALK ON GOOD ROADS.

Four hundred members of the Illinois Manufacturers' Association gathered at the Hotel LaSalle January 21 to hear Edward N. Hines of Detroit talk on good roads and to formulate plans for a campaign to promote good roads throughout the state. John M. Glenn, secretary of the association said before the luncheon that the meeting was expected to be one of the most significant in the good roads movement in the state.

"Mr. Hines will tell what good roads can do for the big city and the country," said Mr. Glenn. "He will show by his experience in good road building in Wayne county, Michigan, in which Detroit is situated, that good roads reduce the cost of living by making markets more accessible to the farmer; open up the country districts to the city people; make automobilizing for commerce or pleasure safer and more profitable; enhance the social life in the rural districts; make schools easier to reach and, in fact, do many other wonderful things for the community blessed with firm, smooth highways."

Following the luncheon, members of the association and their guests visited the cement show at the Coliseum, a special programme having been arranged for their entertainment.

ANNOUNCEMENT.

Raymond W. Dull & Co., formerly of Aurora, Ill., has moved its office from that city to room 718 Chamber of Commerce building, Chicago, Ill., where Mr. Dull will be glad to have his friends call and see him.

Mr. John T. Simpson, one of the organizers of, and for a number of years president of the American Concrete-Steel Company of Newark, N. J., has disposed of his entire interest in that company and opened an office at 1224 Essex Building, Newark, N. J., to follow the practice of architecture and engineering.

Mr. Simpson early became identified with the reinforced concrete industry, and as early as 1896 was connected with the Columbian Fireproofing Company on some of the pioneer work done by that concern.

He is the inventor of the American System; also the XpantruS System for reinforcing concrete and a number of other devices and methods for making better and more economical construction in reinforced concrete.

He was one of the first to suggest the use of reinforced concrete for school buildings and was instrumental in having a number of such buildings erected throughout the country, having been able to reduce the cost of same in many cases below the cost of non-fireproof brick and wood buildings.

SOME CHEERING WORDS.

The editors of this paper are only human, although at times it looks like we are "superhuman." But, when we receive missives like the one below, it makes us take on new life, and spurs us on to do higher and better things. The following letter speaks for itself:

"Dear Mr. Editor: For the past twelve months your journal has come regularly to our business fireside. You have given us the best that was in you, and we have profited.

"We are hurried folks and of few words and our business friends may not always know the high esteem in which we hold their helpful labors.

"Therefore, as the after glow of the old year fades into the dawn of the new, we thank you for what you have done, in all sincerity. We wish you a new era of personal happiness and business prosperity.

"Greetings. (Signed)
"Smith, Emery & Co., Engineers-Chemists, San Francisco, Cal., December 23, 1912."

MOVES OFFICES.

For a quarter of a century the general offices and Chicago laboratories of Robert W. Hunt & Co. have been in the Rookery. Owing to the inability to secure in that building the necessary space in which to conduct their very largely increased business, they moved December 1 to the twenty-second floor of the Insurance Exchange building, Jackson boulevard between Sherman street and Fifth avenue, where they will have ample space for their offices and both chemical and cement laboratories.

BIG CROWD OPENING NIGHT.

The cement show opened with the largest attendance that ever honored such an occasion. Not even the great record night of the New York Cement Show in Madison Square Garden, which was the record until now, could equal it. More than twenty thousand people were in the Coliseum during the opening session. Not only was the main floor and annex filled with people, but the great encircling galleries were filled to overflowing.

C. J. Hunt, United States representative of Wadsworth, Howland & Company, Inc., Boston, Mass., who is known all over the United States, Canada and Cuba as the "Bay State Man," although covering such a vast territory is always remembered by each and every man in the building material trade, because of his genial and pleasing personality. Mr. Hunt attended the Chicago Cement Show in company with M. C. S. Robbins, who is sales manager of the Wadsworth, Howland products in the Mardi Gras city of New Orleans. Wadsworth, Howland & Company deals in Bay State brick and cement coating for protection of concrete or cement construction against damage by moisture, etc., and which is useful in residence construction in that it can be tinted any shade desired, whether brick or wood, and also in mill, bridge or sewer construction. The company also manufactures paint, varnish and lead corroders.

Hon. Theodore E. Burton, of Ohio, and Hon. John W. Weeks, of Massachusetts, have again introduced in the Senate and the House bills for one cent letter postage.



THE NEW MONARCH.

Soft in the hands of the master,
Plastic to those who know
To shape and mold, to keep and hold
The beauties I bestow.

Wealth to men of mettle,
Strength to the nation great;
When used aright, my power of might
Is sure as the hand of fate.

The face of the dead quiescent,
Caught in my soft embrace;
In likeness cast, will ever last
While the aeons roll apace.

Mine is the strength of the ages,
My life with the future blent;
For Earth to gain, I hold my reign,
I am the king—CEMENT.

It would be natural to devote these two columns to the Cement Show, but having spent nearly the entire week there, we feel more like talking about something else for a change.

We believe it was a great show; in fact, we are going to assume that it was, so we will not have to take time to explain our reasons for that belief. As intimated above, we had enough show, we think, to last us for awhile.

There is a subject so much more interesting, so much more needful to human happiness than the manifold uses of cement, that we are going to have a little exposition all to ourselves.

We refer to that other great building material—sleep. Much to our sorrow, it has been neglected of late. There seems to be a certain amount of friction between these two building trades. We heard groups of men at the Coliseum discussing the merits of cement for building everything from a watch to a coat hanger, but listened in vain for a word about sleep. No one at the show seemed to have any use for it.

The domicile in which we spend our time is set on two movable supports, and at present it is greatly in need of repair. The uprights are shaky, the roof needs shingling and the windows are in bad shape. In fact, it's difficult to keep the shutters up for any length of time.

Do we need Cement? We do not! We are going to join the slumber union and go into the sleep business. For this is the way we feel about it. The show, we know, from the first word go

Was a wonder and hard to beat;
And the throng stayed long, till the closing gong.
Ushered them to the street.
But now it's o'er,
With the clang and roar,
And we're doggone tired, and stiff and sore.

• • •

Our youth, forsooth, at the front of the booth,
Stood guard for a day or two;
We would swell, and tell of the things we'd sell,
Before the show was through;
But now we weep
And for bed we creep,
We're off for a month of good, sound sleep.

"I saw Maud Allen dance last night," said Jones, but Brown scoffed, "Thunder, I saw a girl dance in New York last week who can outstrip her."

1913

Seemingly, judging from the January numbers of our various esteemed contemporaries—we almost said competitors—it is the proper thing to devote columns of space to the guesses of prominent business men as to what particular kind of a year in a business way 1913 will be.

Our opinion not having been asked, we will delay forming same for a few months, but it's peculiar when you look them all over, how parallel they are in the largeness of their vision. A more hopeful bunch of forecasts you could hardly find.

But look back to the January issues of 1912. You will be surprised to find the same gay, exuberant bundle of expectant joy.

Oh, no, we are not turning on the cold water faucet. This is merely an observation.

We will depart from our customary reticence and state as our firm belief that the month of January is going to be a hummer.

SACK SENSE.

A sack that carries its contents from the mills of the manufacturer to the ultimate purchaser, that is properly untied, that is kept clean and dry, that is not used as a covering for concrete nor as a tool-chest, nor as a knee, foot or back protector, nor as a hod-pad, nor as a shoe-cleaner and that, thus once served its legitimate purpose, finds its way back to the mills of the manufacturer within a reasonable length of time, such a sack is again available for use and is worth the sum of ten cents.

But * * * A sack that, upon its arrival at the job is opened with a shovel, that is used to plug holes in the water barrel, that is used as a sun-shade for concrete in summer and as an overcoat in winter, that likewise serves as a workman's apron, tool receptacle, and that is commissioned for other miscellaneous purposes just because it is handy, that becomes dirty, wet and even torn in places, the value of such a sack has reached the zero mark and consequently the needless labor of collecting, sorting, counting, bundling and tying sacks so improperly used, should be avoided and the freight on their return saved by the man who purchased and used the cement.

SUSPICIOUS.

Bank President—What's the matter?
Bank Vice-President—I was just thinking: I sat next to our cashier in church yesterday, and I don't quite like the way he sings "Will they miss me when I'm gone?"—Puck.

THE IMPORTANCE OF AGGREGATE.

Aggregates have always been the least studied, the least understood, and yet the greatest variable that enters into the concrete mixture.

Probably there is more room for study in this particular direction than in any other in connection with the cement industry. The generality so often used in specifications which usually call for "torpedo sand and crushed rock no larger than one and one-half inch in size" really has little meaning to the production of good concrete.

The proportion as usually stated of "1-2-3 or 1-2-4," meaning one of cement and two of sand and three or four of crushed rock, are only mechanical expressions for the exact determination of the amount of voids which may be found in the mass of concrete after the concrete is mixed.

As a suggestion, would it not be perfectly right and proper to make the specification always read: "such a combination of sand and gravel or sand and crushed rock which will show that all the voids are filled and then attention is given the proportion of cement." After the dry materials are thus provided for, the specification could be made to read: "adding so much water as will produce a saturated solution of all the dry materials," and supplementing this with the further specification: "that the dry materials and the amount of water described should be so agitated or sufficiently agitated to produce a thoroughly intimate mass which shall be determined by the pouring of an adequate quantity to demonstrate that the whole mass or batch will flow through as one poured combination of materials."

There is no question that such a specification would produce something at approaching a perfect concrete mixture. If to such a mixture there should be added ten per cent of carefully selected hydrated lime, the mixture would be very largely improved because it would have from 15 to 20 per cent greater values in compression than it would otherwise have and increase in value on the tensile side of the structural member in equal proportions, although that feature is seldom or never taken into consideration in figuring concrete construction.

The selection of aggregates is equally as important as the production of proper cement for the making of perfect concrete. Demonstrations upon the subject of aggregates have never proved that the hardest obtainable aggregate material is the best for finished concrete by any means. There is probably no more porous and fragile material than slag, the absorption of which has been often proved to be from 25 to 30 per cent, and yet slag concrete has shown quite as great a resistance to compression as concrete made from the granite spalls or the hardest trap rock that has ever been broken for concrete aggregate purposes.

The same thing applies to gravel pebbles where some of the most absorbent have made harder concrete than flint pebbles mixed in the same proportion and with the same sand and cement.

The study of aggregates is probably only in its infancy and the future use of cement is going to lead into fields yet undiscovered and not yet pioneered. The proportion of the content of silica in sand may or may not have a very distinct value in the early stages of the set of concrete, but it seems to be a very important governing feature in the prominence and durability of concrete in the completed work.

In contradiction of this there are sands low in their primary content of silica which require a richer mixture of cement and yet produce a harder and more durable concrete than that made from sand which carries a very high content of silica and which shows high values in compression taking tensile strength in the early stages of its set.

The committee on aggregates and the study of aggregates by the association has not been completed by any means; in fact, it is hardly begun, and some of the most important and interesting sessions of the future meetings of the N. A. C. U. will be those devoted to the study of aggregate material for the production of the best and most durable concrete. There are several investments going into the production and washing of sand and gravel and into the quarrying and crushing of rock for concrete purposes, and there is much to be developed yet with regard to the most desirable, the best obtainable and the most valuable of investments in this particular line.

We have well standardized cement and it is fairly well understood; but of aggregates there is little or nothing as yet dependable and we must admit that where from 60 to 70 per cent of the mixture of concrete is concerned, it stands out as the one important subject for future study, although we know that to get good enough aggregates for the average calculations of construction and for the uses in roadways, bridges and many other important public works that the aggregate committee realizes the importance of the subject which they have in hand.

CEMENT

ASSOCIATION OF AMERICAN PORTLAND CEMENT MANUFACTURERS.

Meets Semi-Annually.

OFFICERS.

John B. Lober.....President
Robert S. Sinclair.....Vice-President
W. H. Harding.....Treasurer
W. D. Lober.....Asst. Treasurer
Percy H. Wilson.....Secretary
Lewis R. Ferguson.....Asst. Secretary

A. H. Craney, Jr.,
T. Henry Dumary,
Edward M. Hagar,
Richard Hardy,
R. W. Kelley,
R. W. Lesley,
D. McCool,
W. S. Mallory,
John A. Miller,
John R. Morron,
L. T. Sunderland,
Frank E. Tyler,

Executive Committee

GOOD FELLOWSHIP DINNER.

On Monday evening, January 6, the Lehigh Portland Cement Company's western sales department held a little joy-fest at the Auditorium Annex, where the well-known Chinaman Lee-Hi presided in all that the mysterious meanings of that term implies.

A. Y. Gowen, flanked by Harold Scott, sales manager, and Fred Paulson, traffic manager, sat in the midst; and there was something doing every minute, for John Evans was full of droll stories, and Paul Janderel had much philosophy. Fillion had promised to be good and Eccles lasted in good order up to the cigars. Most of the fellows had something to say and, in fact, it was hard to keep them from saying it all at the same time; for if ever you get mixed up with that bunch of Lehigh enthusiasts you will realize the cause of the jiu-jitsu that the little Chinaman practices wherever there are specifications for cement, and the big city dealer looks out on the scales platform to see how many bags there are on the wagon, or the little country dealer whittles a cedar stick and rolls his quid of tobacco against the loose tooth in his left jaw and sells one bag of Lehigh on board of a wheelbarrow, or puts it in the back of a farmer's buggy along with the groceries and dry goods.

No matter where it is, or how far it is from the mill, there is something peculiar about this enthusiasm, and the center of it on the sixth of January about eventide was in the Green Room of the Auditorium Annex in Chicago, where the high priests of the order of Lee-Hi were assembled.

Mr. Gowen struck the keynote of the occasion, as well as the keynote of Lehigh policy, in the talk that he made after the Havanas had been lighted. First there was respectful silence to listen to the words of the chief, but soon there was a roar of enthusiasm by the fellows who were anxious to get a bat in their hand so as to take a swat at the ball and increase their batting averages. By kind dispensation almost every fellow was allowed to speak his little piece. Harold Scott and Fred Paulson

whooped it up. Chittenden told just how to do it, and some other boys from the field told amusing incidents and other things about the distribution of cement.

It was a very pleasant occasion and one which will pay the company enormous dividends, for did not that great leader Napoleon once announce that enthusiasm, which in French is "esprit du corps," had won all of his brilliant victories, and he was the romantic God of Battles.

Those present and participating in this pleasant little occasion were:

Lehigh Banquet Attendance.

A. Y. Gowen	M. G. Scott
F. E. Paulson	L. B. Daubach
H. M. Scott	Geo. Hird
W. E. Viets	Norris Wilcox
S. B. Chittenden	C. B. Rogers
J. B. Mackenzie	C. G. Reid
W. H. Weitknecht	Frank Holland
J. W. Bateman	C. M. Handy
John Evans	J. H. Black
H. E. Wallace	D. M. Adams
Geo. Wallace	P. A. Janderel
T. R. Cass	B. F. Burch
W. H. Eccles	A. Murray Jones
Geo. Eccles	H. L. Scott
J. J. Kehoe	E. B. Barrows
C. O. Reagin	B. F. Andrews
D. D. Hennessey	J. D. Mitchell
Geo. Schwaab	C. L. Barrett
L. J. Moss	"Pop" Irvine
E. E. Fillion	Chas. D. Warner

Ed. Sweeney

NEW YORK ROUTE TO BE OF CEMENT.

New York, Jan. 18.—Business in the local cement trade was quiet and without new features of interest during the past month. Prices at the beginning of the year were quoted from 50 to 60 cents in bulk, at mill, but at the beginning of the fall months prices began to advance and at the close of the year 90 cents was established.

The foundation of office building at 50 Broad street is the first waterproof one that has been built in this city of concrete waterproofed by cement manufactured by the Lawrence Cement Company, who use the McCormick process of waterproofing. This foundation alone has consumed over 1,500 barrels of this cement, and the entire structure will cost about \$3,000,000.

Contracts to supply cement have been awarded for the Broadway-Lexington avenue route, which will extend from Battery Park running through Broadway and Lexington avenue and thence to Mott avenue in the Bronx. This route covers a distance of fifteen miles. About 1,500,000 barrels will be used and will be supplied by the following companies: The Pennsylvania Cement Company, the Lawrence Cement Company, the Alpha Portland Cement Company, the Atlas Portland Cement Company and the Lehigh Portland Cement Company.

E. F. Miller of the Lawrence Portland Cement Company, stated: "Manufacturers are now overhauling their plants and making necessary repairs and additions. The demand for our waterproofing cement waterproofed by the McCormick process has been increasing steadily and we have just delivered 1,000 barrels to Bernheimer & Schwartz's brewery to waterproof their water-runs and tubes throughout the building."

The Lehigh Portland Cement Company reported that the demand for cement was light during the past month and taken as a whole business during the past year was good. They continued making deliveries during the month on outstanding contracts as the mild weather has permitted work to continue on many of the large operations through-

out this section. They are highly optimistic as to future business and look for a good amount of business to come across for operations to start next spring.

CEMENT IN SEASONABLE DEMAND.

Louisville, Ky., Jan., 18, 1913.—The plant of J. B. Speed & Company has been closed down for the winter and is being put in shape for the coming campaign. Henry Gray, secretary of the company, reported that 1912 was a satisfactory year in every respect. Deliveries in the South, where the Louisville & Nashville railroad has done much construction work, will close about the last of January, the road having completed the bulk of the jobs.

The plant of the Kosmos Portland Cement Company, after a week's closedown, has resumed operations and will probably run steadily until spring. C. M. Dugan, plant manager of the company, is one of the incorporators of the Southwestern Development Company, which has established the new town of Des Moines, in New Mexico. Mr. Dugan expects the place to become the metropolis of that section in a few years, and is enthusiastic over the possibilities of the state.

While trade with the Union Cement & Lime Company is seasonably quiet, it is nevertheless strong considering the season. Both Lehigh, the leading line of the Union, and Old Dominion, another standard cement, are in good demand, despite the slackening of operations in building circles. Prices on Old Dominion are a bit stiffer in this market than local offerings, on account of a greater freight rate. Secretary George F. Meldrum regards the outlook as favorable for at least a normal volume of business in 1913.

WILL SELL MUNICIPAL CEMENT PLANT.

San Francisco, Cal., Jan. 20, 1913.—The Pacific Portland Cement Company has taken a five-year lease on a spur-track warehouse at Sixteenth and Harrison streets, at a total rental of \$14,400.

It is reported that final arrangements have been made for the construction of the National White Cement Company's mill near the San Fernando Rock Company's plant, San Fernando, Cal.

The Arrowhead Portland Cement Company has been incorporated at San Bernardino, Cal., by Los Angeles men, with a capital stock of \$750,000. The company intends to install a plant near Etiwanda, Cal.

The city of Los Angeles has passed an ordinance declaring the intention to sell the municipal cement plant at Monolith, in Kern county. Bids have not yet been called for, as it is desired to find a purchaser who will pay a fair price. The plant is valued at over \$500,000.

AN ALL-RUSSIA CEMENT SYNDICATE.

Negotiations have been started to create an all-Russia cement syndicate for the development of the industry, in view of the fact that Russia cement, on account of its high price, can not be shipped to markets more than 400 miles from the factory, while cement works are being built only in European Russia, no plants of this kind existing in Siberia. [The Russian cement trade was reviewed in Daily Consular and Trade Reports on Dec. 7, 1912.]

The cement market of the Moscow district has been controlled heretofore by three firms, whose total production amounted to 2,500,000 barrels per annum. This quantity was insufficient to satisfy the demands of this district, and consequently cement from Poland, the Caucasus, and southern Russia was also brought to the Moscow market. A new company, capitalized at \$1,287,500, is being organized in Moscow for the production of 600,000 barrels of Portland cement per annum. A plot of ground beyond the Shelkovo station of the Northern Railways has been purchased, and the construction of the works will begin in the spring. They will be equipped with the new type of revolving kilns.

There has also been founded a new company for building and operating the Moravin cement works in Lublin Government. The capital will be \$515,000. At Kharkof the town committee for water supply has decided to build cement and concrete works, the output of which will be used to line wells. As these wells will be built for fire service, the committee intends to request the insurance companies to contribute.

Judge Thompson of the United States District Court, Philadelphia, has granted an order authorizing the receivers of the American Cement Company to vote \$452,200 worth of the preferred and common stock of the Norfolk Portland Cement Company. This was done at a subsequent meeting of the stockholders of the latter concern to sell the assets in furtherance of a plan of reorganization.



THE ARMY OF LEHIGH AT MESS.

ROCK PRODUCTS

CEMENT MANUFACTURE IN NEW ZEALAND.

No doubt many of our readers would be interested in learning how cement plants are conducted in foreign lands, and we are therefore printing the description of Wilson's Portland Cement Company, Ltd., Warkworth (Mahurangi), New Zealand. The head office of the concern is at Auckland. T. H. Wilson, works manager, writes as follows:

"We are working on the 'Dry' system, the works being situated on the banks of the Mahurangi River, about 40 miles north of Auckland. The cement rock deposits extend over an area of 800 acres, which is all owned by our company. The cement rock is very nearly the correct cement raw mix, containing from 73 to 76 per cent carbonate of lime.

"The cement rock is first stored in bins, analysed, passed through an 11'-0" pan mill, when the necessary additions of lime or clay are made; then through a rotary rock drier; then elevated into storage bins of 600 tons capacity over the raw mills, these being 33-inch Fuller mills and contained in a concrete building; the mix is stored by elevator in tanks behind the rotary kilns, sufficient for 48 kiln hours. The rotary kilns are of Allis-Chalmers manufacture, there being two 60'x6' and one 100'x8', producing about 800 long tons per week. These also are contained in buildings of concrete and iron construction. The clinker after being passed through a rotary cooler has the necessary gypsum added; passed through rolls reducing to three-fourths inch; then elevated to the storage bin. The preliminary grinding is done by Kent mills, the fines being separated by 'Vibracone' separators. The finishing being done by 22'x5' tube mills. The packing is all done by hand, and shipped in jute bags. The power is gained from a battery of seven boilers; two compound engines of 400 horsepower each, and one of 750 horsepower. The driving throughout being ropes and belting.

"The whole works is lighted by electricity, derived from a small engine and dynamo. Attached to the works is a repair shop, in which practically all of our machine work can be done. The testing is carried out by a chemist and assistant."

THE GERMAN CEMENT INDUSTRY.

(Vice Consul General De Witt C. Poole, Jr., Berlin.)

The Imperial Ministry of the Interior has published data relative to the state of the German cement industry during the years 1910 and 1911. The statistics relate to the operation of 135 plants and are based on definite information furnished by 132 of them and on estimates for the remaining 3. Of the 135 plants, 117 were engaged in the production of Portland cement, 6 in the production of iron Portland cement, 6 in the production of slag cement, 2 iron Portland and slag, 1 Portland and iron Portland, and 3 in the production of all three varieties. This distribution was the same in both 1910 and 1911.

The output of Roman cement was not included in the statistics of production. The total production of all other kinds of cement in the 135 plants under consideration was 34,512,283 barrels (of 375 pounds net each) in 1910 and 39,128,216 barrels in 1911. The value of the 1910 output was \$29,016,246 and that of 1911, \$33,382,594. Of the total output 2,226,045 barrels, worth \$1,903,286, in 1910, and 2,710,901 barrels, worth \$2,416,414, in 1911, were iron Portland cement, slag cement, etc. (The manufacture of "iron cement" was described in Daily Consular and Trade Reports on May 20, 1908.)

The estimated value of the raw materials used in the production of this cement was \$2,815,064 and \$3,213,714 in 1910 and 1911, respectively.

The statistics of labor employed are based on industrial-insurance record and relate only to those employees who received less than \$476 a year compensation, or in general the shop forces. Of such persons an average number of 3,970 in 1910 and of 4,211 in 1911 were engaged in the mining of raw material from mines owned or leased by the factories under review. The gross amount of wages paid these employees was \$1,069,810 in 1910 and \$1,189,286 in 1911. The average number of persons of the kind under consideration employed in the factories themselves was 22,386 in 1910 and 22,905 in 1911. The aggregate of wages paid them was \$6,094,466 in 1910 and \$6,413,862 in 1911.

The Cleveland Material Company, Cleveland, Ohio, has a beautiful and useful souvenir in the shape of a vest pocket lead pencil, which is being given to their customers for the special purpose of signing orders for building material in the year 1913. It is a very pretty reminder and one that is highly appreciated.

Medusa White Portland cement and its manufacture is fully described in the latest bulletin issued by the Sandusky Portland Cement Co., of Sandusky, Ohio, and in the pamphlet are contained many illustrations of varied types of buildings in which Medusa White Portland cement entered largely into the construction. Beautiful cottages, magnificent residences, theaters, apartment houses, hotels, gardens, bridges, schools, universities, churches, the United States Senate office building and the world-famous fifty-five story Woolworth building now being erected in New York are illustrated in the booklet. Medusa White Portland cement is a true Portland, perfectly white in color and stainless, and possesses great value as a material embodying strength, durability, cheapness and convenience. It is a high-testing Portland, passing standard specification. The booklet explains in some detail the uses of Medusa White Portland cement in building ornamentation, stucco, concrete building blocks, interior decoration, statuary, cemetery work, parks and grounds, tile, mosaic, colored concrete, etc. A special paragraph is devoted to the use of this cement for stucco. The booklet will be mailed free to those interested in concrete construction or the use of cement in any manner upon application to the office of the company.—Advertisement.

A recent Philadelphia dispatch to ROCK PRODUCTS contains the following information: Charles J. Rhoads, chairman of the reorganization committee of the American Cement Company and its subsidiaries, makes the following announcement: "Charles F. Conn, recently appointed agent for the reorganization committee of the American Cement Company, has been elected president of several subsidiary companies, including the Central Cement Company. He takes the place of John W. Eckert, ex-president of these companies, who recently resigned. These changes are made with the full co-operation of Robert W. Lesley, who will take an active part in the newly reorganized American Portland Cement Company. Mr. Lesley is the largest individual holder of the securities of the company and will be a member of the new Board of Directors."

The last issue of "Universal Bulletin" which is published by the Universal Portland Cement Company, Chicago, is one of special interest. It contains many illustrations of various operations in which reinforced concrete is the principal factor. Bridges, factories, fences, tunnels, reservoirs, saw mills, roof construction and many other uses of concrete are described and fully illustrated. The Universal company has in stock a great many booklets for free distribution on almost any branch of industry into which the use of cement enters. They also maintain an information bureau for the purpose of assisting their friends and customers in new problems involving the use of concrete, which is free for the asking.

J. S. Masters, superintendent of the raw materials department of The Olympic Portland Cement Company, Ltd., Bellingham, Wash., stated to a representative of ROCK PRODUCTS a short time ago that the new cement plant of that concern, when completed, will be one of the finest and best equipped plants on the Pacific Coast. The quarry will have a capacity of 600 tons per hour and will crush its product to a two-inch size and under. The entire operation of quarrying will be by gravity. All power will be electric, both at the quarry and the cement plant proper.

Incorporating for \$50,000, the Wright Lime & Cement Company will start something new in their line of business in Memphis by organizing a co-operative company in which contractors and consumers will be stockholders and sharers.

A charter was filed recently containing the following named men as the incorporators: Steve M. Wright, Fred W. Cubbins, J. E. Trezevant, S. J. Cockrill, Cass Bessey and B. F. Holmes.

Several of the incorporators are well known in the material building line in Memphis and Steve Wright has been known as a lime and cement dealer for over 20 years.

Building operations increased some \$2,000,000 in St. Louis in 1912 over 1911, according to the annual report of the building commissioner. The total cost of new buildings in 1912 was \$20,676,403 as compared with \$18,607,555 for 1911.

The Reiman Lime & Cement Company, of Terre Haute, Ind., has been incorporated with capital stock of \$10,000, to deal in building material. The incorporators are E. E. Reiman, E. L. Reiman and V. P. Reiman.

PORTLAND CEMENT TRIUMPHANT.

The development of a plastic building material has had the concentrated study of the best scientists for hundreds of years, and the production of Portland cement is justly considered as the crowning completion of the study and the experimentation of the best scientific thought of centuries. It has been made perfect only in the last half century, although there were previously developed and introduced many approximations which were temporarily useful and which, in many cases, for a time were considered to be the finished material which had long been sought and was long needed in the building operations of every developing civilization. Some of the approximations to a perfectly constant cementing material were good enough to be useful to unscrupulous adventurers whose interest in building operations was limited to the time of construction, the period necessary to make collections and a quick get-away.

Every little while we see some of these ancient approximations foisted upon the unsuspecting and untechnical public by the same class of modern Charlatans who are after the quick money, and whose operations will leave a mournful streak of disappointment in their wake. Portland cement, the well-established and properly indorsed material for permanent investment in buildings which will never deteriorate in value, stands supreme and triumphant, commanding respect because of its known, tried and demonstrated high qualities and permanent character. Portland cement unlike all of its temporarily offered substitutes, was never introduced until after its chemical and physical qualities had been well established by the best scientific research and the most carefully developed practice.

In Portland cement there is no deception attempted. It consists of a properly proportioned combination of earthy oxides which have the property of taking on hardness by natural processes of hydration and crystallization in combination with aggregate materials largely drawn from the most plentiful material of the earth's crust, such as sand and broken stone of various kinds, so that the cement itself forms a new type of sedimentary rock by natural process as it proceeds into the chemical change of recarbonation; so that concrete made from Portland cement is in fact an artificial calcium carbonate which is well known as that type of material from which about one-third of the earth's crust has been formed by nature, and consequently it is to all intents and purposes just as durable as the earth itself.

The only difference between properly made concrete when made of Portland cement and natural calcium carbonate or lime rock, is the fact that in its incipient or mixing state it is a semi-liquid and can be made to take on the forms of the vessel or frame in which it is molded, thus making it adaptable for many uses at a low cost which would be otherwise expensive in the parallel product produced by nature.

Beyond this, the concrete industry has demonstrated that steel rods, when imbedded in the cement mixture at the time that it is plastic, will be included in the resulting hardening so that the advantage of the tensile value of the steel can be imparted to the resulting artificial stone, and capable examination and demonstration has proved that the steel so imbedded can never rust or in any way lose its value as a reinforcing member. This asset to Portland cement gives it the quality of adaptability to engineering uses for practically every problem that the designer can take on.

For the reason that Portland cement is composed of the three most plentiful materials to be found on the earth's surface, and the fact that millions of dollars have been spent in the development of machinery to handle and manipulate those materials in the most economical manner, Portland cement is today produced and sold cheaper than it is possible to produce any substitute material which will do the same work and accomplish the same results.

The raw materials for producing Portland cement are calcium carbonate, ordinary lime rock, clay and silica. These three substances make up seven-eighths of the earth and are naturally, on account of their plentiful supply, the ultra-cheapest materials that people can ever find who reside upon this planet. A cement plant is located invariably at such places as these materials fall closest together in natural deposits. The machinery for handling the materials is the most economical that modern science has yet devised. If any man can introduce even the slightest fractional economy it will be adopted instantly—for the tonnage handled by the average cement plant is simply enormous.

There is no way to find a cheaper raw material to start with; there is no material that can be handled so cheaply as the materials from which cement is manufactured, and there are no raw materials so durable as those used in the production of Portland cement known to man—for it is the composition of

the planet itself. Those who make a big noise about a substitute for Portland cement can be put into two classes—they are foolish and may not know any better, or they are deceivers with an object in view for practicing such a deception.

The people who visited the Chicago Cement Show have had cited to them the sensible, reliable and safe building development of the present age presented to their inspection, and there is not one exhibit allowed to be offered which has not the most unanimous endorsement and backing of the best scientific development of this enlightened age. There was no attempt to deceive anybody or to make false or cunningly persuasive arguments about unsupported quotations of costs or the pretense that houses can be built for nothing; but the best that modern ingenuity, modern science and modern conservatism has to offer was on exhibition at the Sixth Annual Chicago Cement Show at the Coliseum last week.

The Cement Show is a national exposition of the cement industries and we believe all were amply repaid in pleasure and in the acquisition of valuable information by visiting this show. Cement construction is of interest not only to the architect, the engineer, the contractor and the builder, but it is of deep importance to every home owner who wants better construction at less cost—to every tenant who wants the most for his rent money in house comfort and protection against fire—to every citizen who has the city's welfare at heart in sanitary buildings, more beautiful architecture and safer construction. Out of concrete will be built the enduring monuments of the future. Factories, warehouses, dams, retaining walls, bridges, the millionaire's home and the workingman's cottage—to the building of all of these concrete lends itself most flexibly. No man abreast of the time can afford to remain unacquainted with the modern uses and wonderful forms of cement.

CANADIAN CEMENT PRODUCTION.

(Abstracted from official Canadian report.)

The total quantity of cement made in Canada during 1911 was 5,677,539 barrels of 350 pounds net each, as compared with 4,396,282 barrels in 1910, an increase of over 29 per cent. An average of 3,010 men were employed in the industry during 1911, and the wages paid aggregated \$2,103,838. The increase in annual production since 1905 has been nearly fourfold. The consumption of cement in Canada in 1911 is estimated at 6,354,831 barrels, of which 5,692,915 barrels were Canadian and 661,916 barrels imported.

CEMENT WANTED.

A business firm in India informs an American consulate that it would like prices on best quality of slate-colored Portland cement c. i. f. city destination. In case orders are given shipments must be made via Liverpool and Bibby Line to city in question. It is absolutely essential to quote c. i. f. rates via this route. Large quantities of Portland cement will be required during the present year. English Portland cement is sold in that country in kegs of 400 pounds net. Reply to No. 10301, Bureau of Foreign and Domestic Commerce, Washington, D. C.

CEMENT STAVE SILO.

R. P. Mitchell, of the Cement Stave Silo Co., manufacturers of cement stave machines, etc., in talking to a representative of Rock Products, said: "The visitors to the Cement Show seemed to be very much interested in our silos. There were only eleven of these silos west of Chicago a year ago; today there are 1,000 in 13 different states. I find wherever we get them introduced we have no trouble in selling them. We expect to construct at least 4,000 of them this season, chiefly throughout the middle west. The principal part of our business is the silo business, the airtight receptacle for ensilage, a farm implement that greatly economizes the farmer's product."

BRADLEY CEMENT DIRECTORY.

The Bradley Pulverizer Co., 92 State State, Boston, Mass., write under date of January 20, as follows:

"We wish to advise you that we are this year publishing the American Cement Directory, and had intended having same published in time for distribution at the cement show, but have been unable to get it corrected in time for this purpose, and will therefore make distribution by mail, sending one copy to every cement plant, superintendent, purchasing agent and chemist."

Howard H. Leh, one of the best known cement chemists on the Pacific Coast, has resigned his position with the Cowell Portland Cement Company, Cowell, Cal., to accept a position as chief chemist with the Old Mission Portland Cement Company, San Juan Bautista, Cal.

CONCRETE ELEVATORS

By B. I. WELLER.

(Read at National Association of Cement Users' Convention.)

Elevators as a means of housing and handling grain did not make their appearance until the latter part of the last century. The first real elevator of which we have any record is the "cribbed" wood type and there are still a good many of these houses in existence. This old type is interesting when we consider that at one time an elevator of nearly 4,000,000 bushels capacity was erected complete, and almost totally filled with grain in a period of forty-four days. Of course lumber was plentiful and no expense was spared and no restrictions put on the builder except to gain time. As the price of lumber advanced it became necessary to cast about for other kinds of material with which to build, the elevator operator and owner seeking for a material which would lower appreciably the insurance rate, which on wood was very high.

The first fire-resisting elevators were built of steel, practically on the same plan as the old wooden structures which were rectangular in plan and had cribbed bins elevated on posts and usually arranged to suit unloading conditions. Up to this point all storage and handling devices were carried under one roof, but it was then demonstrated that all machinery for unloading, handling and shipping could be more economically installed in separate buildings called the working house. This was accomplished by having two or more parallel tracks alongside of the house for unloading; this, of course, shortening the house and necessarily making it more economical; a separate building for storage being erected having larger compartments than in the working house. At about this time there came into common use in the construction of elevators brick, tile and concrete, of which we will treat later.

CLASSIFICATION OF GRAIN ELEVATORS.

Grain elevators in general may be classified under the following heads: Terminal, Transfer, Country or Line Houses, Private or Hospital. Of the above named classes the Terminal is by far the largest. This type of house is to a greater or less extent under the supervision of the government, both as regards the classification of the different kinds of grain and also the weights of same.

Terminal houses are so called because they are usually situated on a lake or ocean port and receive their grain either direct from the farmer or through their line or country houses.

When grain is received by a terminal house it is given a grade by the inspectors and either stored awaiting future delivery or is shipped direct by boat or rail, usually the former. Part of this grain may have to go through different processes, such as bleaching, drying and cleaning. The operators of these terminal houses usually make a nominal charge per bushel for the handling of this grain with a certain number of weeks, usually three or four, of free storage. If grain is held for storage longer than this time there is another charge per bushel for each month or fraction thereof.

The cleaning and drying when necessary, of certain portions of this grain, is generally absorbed by the operators of the house.

Terminal houses are usually controlled by grain firms who also have their own line and country houses. These country houses vary in size from 10,000 to 50,000 bushel storage capacity, and are placed along railroads throughout the country where the grain is grown. These houses after receiving the grain from the farmer ship direct to their terminal house.

A transfer house is usually located on an ocean port and usually receives its grain by boat from a terminal house. The grain delivered to a transfer house is usually of a known grade, and grain from this house is either delivered direct to the consumer or for export.

A country house, as before stated, is so situated that it can get grain direct from the farmer, and is generally owned and controlled by operators of a terminal house, or by operators of private elevators.

Private elevators are owned usually by milling concerns who control their own elevators and country houses of sufficient storage and handling capacity to satisfy the requirements of their mills.

Hospital elevators are usually small affairs and owned by private individuals who make a practice of buying inferior or damaged grain and putting same through the processes of clean, bleaching, drying, scouring, clipping or any other operations which this grain may require to give it a higher grade or make the product more salable.

METHOD OF HANDLING GRAIN.

Under this heading let us commence with the farmer. He will either ship his grain direct to a terminal elevator, if he is not in position to deliver to a line house, or he may sell it to a commission merchant. If he delivers to a line house the grain is usually delivered by wagon to a wagon dump scale. Under this scale there is a hopper which delivers to an elevator leg. This leg elevates the grain to the top of the house where it is spouted into storage bins, or direct to cars. The car is then sealed and shipped, let us say to a terminal house where it is delivered to the track shed and placed directly over the receiving pit. This pit delivers the grain to a conveyor belt which in turn delivers to a receiving leg. This receiving leg empties into a garner which is over a scale hopper. From this scale hopper the grain is weighed and weights entered both by the government inspectors and operators.

The grain then is generally delivered on to a belt and this belt, by means of a tripper, delivers the grain either into storage or to boats or cars. In case this grain needs cleaning before it is placed in storage it is spouted to cleaning machines, or if it needs drying it is spouted to the drier. In either case it will then take the same course as the uncleaned grain.

Modern elevators are now built with a certain amount of storage in the working house, which is that part of the elevator which contains the elevating, conveying, cleaning equipment, etc. In addition to this there is generally required a certain amount of storage capacity which adjoins the working house. This additional storage is generally called the annex and grain is delivered

to this annex by means of conveyor belts running over these tanks. When grain is taken from these tanks which are hoppers to make self-cleaning, it is done so by the use of conveyor belts which run underneath the tanks through tunnels. These belts deliver in turn to legs. When grain is required to be shipped by boat it is usually taken from the storage annex, weighed and spouted by means of dock spouts into the holds of the boat. If as usual this boat delivers to a transfer house it is taken from the holds of the boat by means of a marine leg which can be raised or lowered at will, and hauled along the dock. After the boat has moored the leg is then lowered into the goat and grain is elevated in this manner. This marine leg delivers the grain to a loft leg which in turn delivers to the scale and thence to storage or reconignment by means of boat or cars. In order to facilitate getting the grain out of the hold usually both ship and clean-up shovels are used. These shovels work automatically and draw the grain up to the leg. In regards to the doctoring of grain great progress has been made in the last decade. It is possible, by the use of sulphur in the bleacher, to lighten oats which are off color, thus giving them a much better grade. Also the beards of these oats may be removed by the use of a clipper, which enhances the value several cents per bushel, and in the up-to-date type of cleaning machines all foreign seeds of every description can be removed from the different classes of grain which are put through these machines. The improved driers of today are also a great achievement. In all modern houses of today dust collectors are also provided which do away with a great percentage of the dust and dirt always to be found in the elevator of the olden time.

It may be interesting to give an idea of how much work can be done by some of the elevators which have lately been constructed. The Canadian Stewart Company recently constructed an elevator for the Grand Trunk Pacific Railroad Company, at Fort William, Ontario. In the track shed of this elevator there is room for spouting over the receiving pits twenty cars at one time, and in a double shift of twenty hours it is possible to unload over 600 cars of grain. A boat which can carry a cargo of 400,000 bushels of wheat can be loaded at this elevator by means of five dock spouts in about three and one half hours. This house is equipped with nineteen cleaning machines, each one able to clean as high as 3,000 bushels per hour and in the drier house it is possible to dry about 2,000 bushels per hour. There are also nineteen elevator legs in this house. Most of these legs have a capacity of elevating 18,000 bushels per hour each. There are ten 2,000-bushel hopper scales and it is interesting to note that each hopper can be filled, weighed and unloaded in a little less than three and one-half minutes. The total capacity of this house is a little less than 3,750,000 bushels, of which the working house capacity is about 750,000 bushels storage capacity.

In regard to power for these elevators it may be said that almost without exception all up-to-date houses are now equipped with individual motors for the different machines, conveyors, belts, etc. This has been proven more satisfactory as to service and also is more economical.

Rubber belting of a high grade is used both for conveyors and elevator legs, and in transmission manila rope is used, both of which and belting having become obsolete, the former principally on account of the noise and the latter on account of slippage.

In regard to marine tower, James Stewart & Company recently erected for the Washburn-Crosby Company of Buffalo a tower which was cylindrical in form and 160 feet in height. This tower was equipped with marine leg, which is by far the fastest on the great lakes, being able to unload a complete cargo of grain at an average speed of 22,000 bushels per hour. The tower, of course, also contains automatic scales and delivers the grain direct to the company elevator by means of conveyor belt running through a tunnel.

MATERIALS USED IN CONSTRUCTION.

The different materials from which elevators have been built are as follows: Wood, steel, brick, tile and concrete. These have been named in the order in which they came into general use and at the present time few elevators are built of any material save concrete. Wood was found to be very expensive when insurance rates were taken into consideration. Steel is a high conductor of heat and there is on record an instance where four box cars laying in a track shed caught fire, resulting in the wrecking of a steel house of 500,000 bushels capacity. The steel walls of the storage tanks were of course very thin, offering little resistance to fires due to the burning of adjacent buildings, and so much of the grain would be damaged due to excessive heat that steel has been found impracticable.

There have been a great many elevators constructed of brick, but it is usually too costly on account of the walls having to be made so thick in order to suit reinforcing conditions, etc.

Tile was used for a number of years, and even now and then elevators are built of this material. The main fault to be found with this material is that it is hard to insure an absolutely waterproof job.

The first concrete elevator was built in 1902 and as soon as the tanks had been filled with grain several of them burst. This naturally retarded the use of concrete for two or three years. However, after one or two concrete elevators had been erected by well known firms, the elevator owners regained confidence in this material. For some time concrete was used only in foundations and in the storage annex, steel or wood being used throughout the working house. Later on storage bins in the working house and the columns supporting same were made of concrete and only the cupola, which is that part of the elevator above the tanks, was built of steel.

James Stewart & Company were the first elevator company to introduce a concrete cupola, and the only structural steel now used throughout the house is a very small tonnage required for machinery supports, tension carriages, etc., where concrete would be entirely impracticable.

It has been clearly demonstrated that there is no better material for protecting the grain than concrete, on account of its being a poor conductor of heat or cold, and being denser and freer from porosity than either tile or brick. It has greater waterproof qualities.

Another point in favor of concrete construction is the low cost, due to the fact that there is practically no skilled labor required in the construction of the modern elevator.

As has been before stated, a modern fireproof house is so designed as to eliminate the use of wood altogether in construction. The cleaning machines, when they are of wooden construction and used in a fireproof house are completely steel clad and the doors must pass the fire underwriters' test. No wood is used even in the office, the housing diagram being made of slate enclosed with

(Continued on page 53.)

Concrete

NATIONAL ASSOCIATION OF CEMENT USERS Meets Annually.

OFFICERS.

Richard L. Humphrey, Philadelphia, Pa., President.

Arthur N. Talbot, Urbana, Ill., Vice-President for two years.

L. C. Wason, Boston, Mass., Vice-President for one year.

H. O. Turner, New York, N. Y., Treasurer.

Edw. E. Krauss, Philadelphia, Pa., Secretary.

DIRECTORS FOR TWO YEARS.

First District—W. L. Church, Boston, Mass.

Fourth District—W. P. Anderson, Anacumato, N. J.

Fifth District—B. F. Affleck, Chicago, Ill.

DIRECTORS FOR ONE YEAR.

Second District—E. D. Boyer, New York, N. Y.

Third District—E. L. Raousie, Dunellen, N. J.

Sixth District—Chas. Derleach, Berkeley, Calif.

ALL ABOARD FOR THE MID-WEST SHOW.

It is with great pleasure that the president and secretary of the Mid-West Cement Show report developments on the coming show to be held at Omaha, Neb., Feb. 4, 5, 6, 7 and 8.

Manufacturers and dealers of cement machinery and appliances have not hesitated in taking space at this show. Nearly all of the exhibit space of the large Omaha Auditorium has been sold at this time, and it is quite certain that space will be at a premium when the show opens.

The early reservation of spaces indicates that interest in the Mid-West Cement Show is not at all waning and that the exhibitors appreciate the efforts of the Nebraska Cement Users' Association to make this show the greatest exhibition of cement machinery and concrete work yet held by that body.

It has always been the aim and purpose of the management of this show to treat the exhibitors fair and square and to exert every means to give them value received.

A great deal of space has been taken by the local cement products plants and most elaborate and instructive exhibits will be made, showing the wonderful progress and development that has been made in concrete in the last year.

The publicity bureau of the Omaha Commercial Club is taking an active interest in promoting the show and thousands of letters, circulars and news items will be sent out by this bureau as well by the Nebraska Cement Users' Association.

The assistance of the railroads entering Omaha has been enlisted and instructions have gone out from the general passenger agents to their local agents to display posters and make a personal canvass of the building material dealers, contractors, architects, and cement products manufacturers in the various towns along the line of the railroads. Their cooperation means a great deal for the success of the Mid-West Show. President Peter Palmer, of the Nebraska Cement Users' Association, has arranged a very fine program for the eighth annual convention, which will be held in Convention Hall, Hotel Rome, Feb. 5, 6, and 7. Able speakers of wide reputation will discuss topics of general interest to all cement users. The program appears below:

Formal Opening Wednesday Morning.

Address of welcome, G. E. Haverstick, president Omaha Commercial Club.

Response, Peter Palmer, president Nebraska Cement Users' Association.

Business session.

"The Efficiency of the Manufacture of Cement Products," by G. F. Lillie, North Bend, Neb.

"Concrete Silos, Farm Buildings, Concrete Blocks, Concrete Roads." (Illustrated)—By A. J. R. Curtis, Asst. Eng. Uni. Port. O.

Question Box.

Appointment of Committees.

Thursday Morning.

"Cement Sidewalks," by Orville Jackson Fee, Lincoln, Neb.

"Culverts and Bridges on Public Highways," Discussion.

"Standard Methods on Measuring Concrete Work." Discussion.

Friday Morning.

"Talks on Silos," by L. W. Chase, Lincoln, Neb. Discussion.

"Reinforced Concrete Construction."

"Ornamental Concrete Work."

"Steam Curing of Concrete Products."

Business Session—(a) Report of committees. (b) Election of officers.

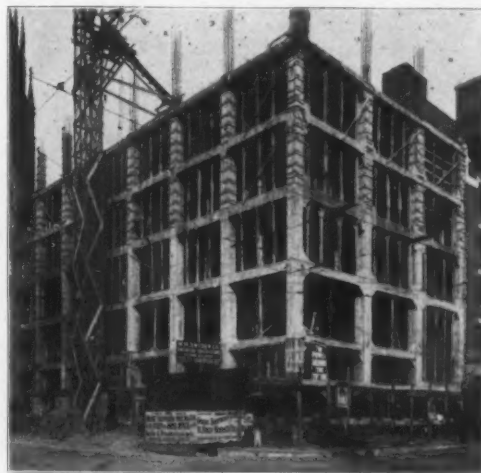
Adjournment.

The secretary is unable to announce at this time the names of all the speakers. President Richard L. Humphrey, of the National Association of Cement Users, will probably be on hand.

LOUISVILLE'S NEWEST CONCRETE SKY-SCRAPER.

At the northeast corner of Fifth and Walnut streets, in Louisville, Ky., one of the several recent illustrations of the Gateway City's unprecedented building activity is nearing completion, in the shape of the Great Southern Fire Insurance Company's 11-story office structure. The building is also a good piece of reinforced concrete construction, the framework being entirely of that material. It has a frontage of fifty-four feet on Walnut street and 105 feet on Fifth street.

The architects who designed the building are Joseph & Joseph, of Louisville, the general contractors being Bailey & Koerner, also of Louisville. The concrete



GREAT SOUTHERN BUILDING, SHOWING REINFORCING AND USE OF CLAMPS ON COLUMN FORMS.

work, however, was all done by the H. H. Snyder Company, a Louisville engineering firm. Something like three thousand cubic yards have been placed in the construction of the frame, foundations and stack. The cement was furnished by J. B. Speed & Company, of Louisville.

The compact form of the building, and the fact that it was not unduly large on the ground or in either dimension, rendered it practicable to chute every yard of the concrete directly to place, without the use of barrows being necessary in any part of the work. This made the process of the construction of the frame a rapid one, as may be gathered from the fact that while ground was not broken until June, 1912, the concrete work was finished well in advance of cold weather.

No especially deep excavation was necessary, the greatest depth being about 21 feet for the boiler foundations, the remainder being only 15 feet. The concrete foundation piers upon which the columns rest go to a depth below the pavement of 18 feet, there being one of these for each column, varying in size with the location. A 12-inch reinforced concrete retaining wall runs around the building, below grade.

One Smith mixer, turning out a half-yard batch, was used for the entire work, the mixture being 1-2-4 for all concrete except the filling between the flooring strips. These strips, of the usual two-inch dimension, rest upon a one-inch cushion of concrete, which, as well as the filling, was a 1-2-5 mixture; and this was the only material wheeled to place, by reason of the comparatively small quantity used, as well as the frequent shifting of the chute, which would have been necessary for placing the mixture in that manner.

Wood forms were employed for all of the work; and those on the columns were fixed in place during the setting by iron clamps, four at each point, the sets being three to four feet apart, according to location of the column. These proved quite satisfactory, except that on some of the lower floors, where the columns ran in the larger sizes, double clamps had to be used, the forms opening up under a single set.

There are thirty-three columns to the floor, running from top to bottom of the building. The basement columns are from 21x21 to 29x29 inches, with eight reinforcing rods, ranging from one inch to seven-eighths inch.

On the first floor these columns run for the most part about 25x25 inches, reinforced by four one-inch rods and four seven-eighths-inch rods. On the second to the fifth floors, inclusive, the columns run 20x20 inches, the reinforcing consisting of eight three-quarter-inch rods; and on the upper floors, above the fifth, with columns 12x12 inches, the reinforcing is reduced to four three-quarter-inch rods.

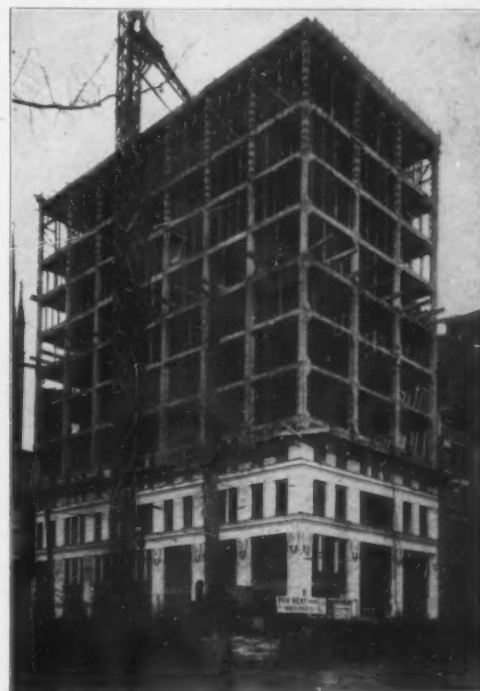
The floors are all nonolithic reinforced concrete slabs, six inches thick, with double reinforcing, the tension bars running half-inch, on four and one-half-inch centers, and the shrinkage bars, crossing these, being of the same size, 18 inches apart. The roof answers to the same description, and will be covered with a five-ply gravel roofing paper.

The girders ran in numerous different sizes on the various floors, and it is impracticable to give dimensions for this reason. The reinforcing consequently differed considerably also on the different floors, each girder, of course, having its own reinforcing specified. Each girder, however, had three types of reinforcing rods—straight, bent, to give a truss formation, and U bars. These ran in size, for the straight bars, from three-quarters to seven-eighths inches, the same being true of the bent bars; and all of the U bars, of which there were from 10 to 14 to the girder, were three-eighths inch. Deformed bars were used, about 125 tons being employed on the entire job.

The reinforcing rods were rested upon a recently patented device invented by Charles A. Koerner, one of the general contractors, consisting of 22-gauge steel, cut and bent into shape to give the usual three-quarter-inch elevation to the rod, with steel wire attached with which to bind the rod to it. These "bar seats," as they are designated, are used in the floor slabs at the intersections of the reinforcing rods, the wire attachment being brought across the point of intersection and twisted so as to give complete rigidity to the bars, compared with the usual precarious method of laying the lower bars on bits of stone or gravel, and trusting to luck that they will remain there while the floor slab is being run; the result being not infrequently that when the forms are removed the rods are found to be exposed, in which case careful construction requires the work to be done over again. This little device is manufactured in Louisville, and is being distributed by the Chicago Builders' Specialties Company, of Chicago.

Besides the framework and floors of the building proper, an additional bit of concrete construction was the lower part of the smokestack. In the basement and through the first and second stories the stack is of reinforced concrete, being 30 inches in diameter, with eight-inch walls, reinforced by one-inch vertical deformed bars and three-quarter-inch hoops. Above the second story the stack is of the ordinary boiler steel type.

The lobby and second floor, according to the present plan, are to be noteworthy features of the building,



GREAT SOUTHERN BUILDING, SHOWING FRAME AND FLOORS COMPLETED.

floors, walls and ceilings being of Italian marble, all except the floor highly polished. Throughout the remainder of the building the floor of the corridors will be tiled, the walls to be wainscoted with Southern marble to a height of seven feet. The toilets will be finished in the same manner. The walls of the office and store rooms will be plastered with a sand finish, and tinted to suit the tenants. The woodwork is to be of mahogany throughout, although occasional changes may be made on special request by prospective tenants.

There will be 165 rooms in the ten upper floors, according to the typical plan, although a great many of these will be either subdivided or thrown into larger areas, to suit the requirements of the occupants. At present five store rooms are planned for the first floor, but it is more than likely that the entire floor will be used by a single tenant, as the corner is particularly desirable. The entire eleventh floor will be occupied by the Great Southern Fire Insurance Company, for which the building is being constructed by the Great Southern Fire Insurance Realty Company, of which J. Bornstein, of Louisville, is president. In the south end of the basement, fronting on both Fifth and Walnut streets, a large and well-lighted room is being finished for use either as a rathskeller or a barbershop. The building will be served by three high-speed electric elevators.

The exterior walls will be of the curtain type, constructed on the two street sides of white enameled brick, manufactured by the Tiffany Brick Company, of Tiffany, O. The trim is of glazed terra cotta, furnished by the Western Terra Cotta Company. On the other two sides of the building the walls are of red building brick, laid in the concrete frame, instead of curtain walls being used.

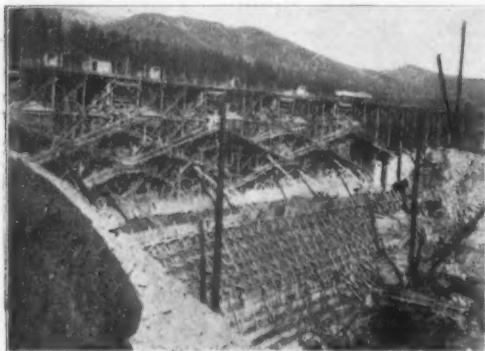
It may be gathered from the details given above that the building will be as nearly fireproof as it is possible to make it, practically no wood entering into its construction save for ornamental purposes, and there being no exposed steel to form a source of weakness and danger if a fire should by any possibility get started, which is extremely unlikely. With the completion of this building, modern in every respect, following the several others recently occupied, and still others planned and in course of construction, Louisville will be in the front rank of cities of her class in the supply of office space available. The contractors expect to turn the Great Southern building over to the owners finished for occupancy by April.

BIG CREEK PROJECT.

The accompanying photographs show construction on dams No. 1 and No. 2 of the Pacific Light & Power Corporation, known as the Big Creek project. The work was done last fall by the Stone & Webster Company. The work so far done is only designed to catch this year's run-off, and 50 feet more will be added to the height of the dams this year or next, bringing the height to 175 feet. The thickness will also be greatly increased by a concrete facing to be added on the upper face.

Dam No. 1 is shown as seen from the lower side, with forms and equipment in place. Ransome mixers, built in San Francisco, Calif., by the Norman B. Livermore Company, are housed in the wooden cabins at intervals in the wooden superstructure, and the concrete is carried down by means of chutes. The mountains seen in the background rise to a height of 11,000 feet.

The view of Dam No. 2 shows the upper surface of what will be the core of the finished dam, which will rise 50 feet above the wooden trestle. The mass rocks used in filling will be noted, half buried in the concrete.



DAM NO. 1, BIG CREEK PROJECT.

CONCRETE PAVING IN IOWA.

Des Moines, Iowa, Jan. 20.—Street paving in Belle Plaine next year will probably be of macadam-asphalt construction on a concrete foundation.

Although a proposition submitted last November in Polk county to authorize the expenditure of \$100,000 for bridges was lost by three votes, it is probable that at least \$65,000 will be expended in 1913 for permanent concrete bridges. The vote is declared to be merely advisory, as the law permits the expenditure of \$50,000 annually by the county and there is already \$15,000 in the bridge fund.

Property owners on Denmark and River streets in Burlington have filed a petition asking that those thoroughfares be paved next spring with concrete.

Newspaper reports declare that Iowa Falls, which in 1912 laid twenty blocks of concrete pavement, likes the material so well it proposes to lay twenty blocks more of the same kind in 1913. The Burlington Hawkeye says: "The cities that have been experimenting with cement pavement seem to be perfectly satisfied and are putting down more of the same kind. It is probably the coming pavement for the rural roads of the state."

The view presented below of the Weyman Bruton Snuff Factory building just completed at Tenth and Harrison streets, Nashville, Tenn., is a piece of concrete warehouse work done by the Ferro-Concrete Company, of Cincinnati, Ohio. The structure is a large and imposing one and is fireproof in every respect.



WEYMAN-BRUTON SNUFF FACTORY, NASHVILLE, TENN.

NEW CONCRETE BUILDINGS FOR NEW YORK.

New York, N. Y., Jan. 18.—A number of reinforced concrete buildings, warehouses, factories and other operations that require the use of concrete have been specified of late and contracts have been awarded. Work will be started in the spring in the majority of the projects.

The Turner Construction Company, 11 Broadway, New York City, have received the contract to erect a seven-story reinforced concrete factory, 225x100 feet, at Clermont and Atlantic avenues, Brooklyn, N. Y., for A. Schrader's Sons. Howard & Chapman, 1123 Broadway, New York City, are the architects. They have also obtained the contract for the reinforced concrete five-story terminal warehouse, 600x111 feet, for the Union Terminal Company at Jacksonville, Fla.

The National Lead Company, 111 Broadway, has awarded the contract to the John Milnes Company, Port Richmond, S. I., N. Y., to build their reinforced concrete manufacturing plant, five stories, 100x200 feet, at Port Richmond, S. I., N. Y. Architect, Frank H. Quinby, 99 Nassau street, New York City.

The Amsterdam Building Company, 43 W. 27th street, New York City, has received the contract to erect for the American Tobacco Company, at 533-37 West 22nd street, this city, a five-story reinforced concrete warehouse, 75x100 feet, at a cost of \$55,000.

Joseph P. Day, a prominent real estate dealer, has purchased for the Holt Manufacturing Company, of Stockton, Cal., 17 acres of meadow land on the Old Plank Road between the Pennsylvania railroad and the Hackensack river, Jersey City. The company, it is said, will build a reinforced concrete factory, 160x160 feet.

Plans are being prepared by Richard A. Wright, 350 Fulton street, Brooklyn, N. Y., for John L. Hopkins & Co., 100 William street, New York City, for a four-story reinforced concrete factory, 100x125 feet, to be erected at 475 Keap street, Brooklyn, N. Y.

Work on the foundations has been started on the reinforced concrete building for the Degnon Realty & Terminal Company, 60 Wall street, New York City. William Higginson, 21 Park Row, New York City, is the architect, and he is also receiving bids.

Plans have been prepared by Harris & Richards, Drexel building, Philadelphia, Pa., architects, for the construction of a one-story reinforced concrete gasoline building, 75x400 feet, at Star avenue, near Borden avenue, Long Island City, N. Y., for the General Vehicle Company, 505 Fifth avenue, New York City.

A nine-story reinforced bakery building will be erected for the Loose-Wiles Company, to cover a plot, 200x430x382 feet, on Thompson street, Queens place and Orton street, Long Island City, N. Y. It will contain a floor space of about 800,000 square feet. The cost will be about \$1,000,000. The site was leased from the Degnon Realty & Terminal Company, 60 Wall street, New York City.

Work will be started at once by the Barrows-Stewart Company, 17 Battery place, New York City, who have received the contract to build the reinforced concrete highway bridge across the Rahway river, also the reinforced concrete dam and gatehouse and complete gate equipment at Cranford, N. J. Oakley & Son, Elizabeth, N. J., are the consulting engineers.

The Vulcan Detinning Company, 114 Liberty street, New York City, are receiving bids for their three-story reinforced concrete factory, 100x75 feet, to be erected at Sewaren, N. J.

William Higginson, architect, 21 Park row, New York City, is preparing plans for Julius Kayser & Co., 45 E. Seventeenth street, New York City, for a seven-story reinforced concrete building, 268x50 feet, to be erected on Kent street, between Dekalb and Willoughby avenues, Brooklyn, N. Y., to cost \$150,000.

WILL BUILD CONCRETE SEAWALL.

San Francisco, Cal., Jan. 20, 1913.—The cessation of work on power dams in the mountains has been followed almost immediately by the letting of large harbor jobs, the principal contracts being for 1,710 feet of local seawall, taken by the Daniel Construction Company at \$392,000. This work, which will be completed in 200 days, will complete the seawall construction now in contemplation. The Daniel Construction Company is just completing the section of large concrete sewer on Second and Market streets from Howard to Montgomery.

The Star Cement Company, of Riverside, Cal., has recently done a large amount of sidewalk work in numerous small towns of that vicinity. The latest job is a mile of sidewalk at Hemet.

The American Beet Sugar Company, operating a plant at Chico, Cal., has let a contract for 18,000 feet of cement pipe to Lon Fleming, of Pomona, Cal.



DAM NO. 2, BIG CREEK PROJECT.

UNIQUE CONCRETE BUILDING FOR LOUISVILLE.

Louisville, Ky., Jan. 17, 1913.—The Central Concrete Construction Company has gone ahead steadily with the Mercantile building at Fourth street and Broadway, and is making splendid progress on that unique structure. This building is to be but two stories in height, and will be one of the handsomest in the city. The design of the building also is distinctly out of the ordinary. The checkerboard style, which has proven so successful in other cities, is being brought into play in the construction of the Mercantile building. The new style is known as the 2A system, steel and hollow tile being used, but offers little that is novel to leaders of the trade, having proved effective in many cities. The Mercantile building, however, is the first to be erected with this method in Louisville, and the Central Concrete Construction Company therefore holds the distinction of being a pioneer to that extent. J. N. Miles is a new engineer with the company, having joined the Central following the recent death of Percy S. Hudson, vice-president of the corporation. Mr. Miles is well known in building circles, especially in the South. His most recent connection has been with the Memphis, Tenn., office of the Central Carolina Construction Company. The vacancy which exists in the office of vice-president of the Central, left vacant by the demise of Mr. Hudson, will be filled at the annual meeting of stockholders, scheduled for February. The Central is now completing the handsome residence of Louis Seelbach, a wealthy hotel man of Louisville, and head of the company which operates the Seelbach Hotel. Reinforced concrete was used throughout the residence. The same is true of a big garage which is going up in the rear of the structure on Cherokee Drive. The Central company is bidding on much future work and expects to maintain its 1912 record, a healthy one.

The Louisville plant of the Unit Brick & Tile Company is to be sold at auction, January 21 having been fixed as the date of sale. Equipment capable of turning out 20,000 brick a day is to be sold, including a mixer and two 75 horsepower boilers. A short lease on the property goes with the machinery. Whether or not the company will begin operations with another point as a working basis, is problematical. President Dennis Long has other interests which demand his attention, but may decide to give more of his time to the cement brick business in the future. Two sites, West Point and Frankfort, Ky., are now under consideration, and it is possible that one or both may be selected as the place for the erection of a new plant. The future course of the Unit Brick & Tile Co. will be decided at a meeting to be held late in January.

The American Concrete Construction Company is carrying over much local work, officers having decided to let things run along until good weather is certain. Immediate business is reported as quiet by the company, though estimating on contracts to be awarded shortly is providing a source of activity.

The Reinforced Bar Seat Company is the style of a new partnership in Louisville, which will manufacture bar seats, to be sold in reinforced concrete construction. Charles W. Koerner, with other well-known builders, is associated with the new concern, which is having the device made locally. The product will be distributed by the Chicago Builders' Specialties Company. The seat is made with four points of contact. A wire is attached, and is twisted around the bar after the latter is placed in position, holding it the specified three-quarters of an inch above the level of the form.

The concrete work on the new Kentucky & Indiana Terminal Railroad Company's bridge has

been delayed until spring. The Sam F. Troxell Company is doing the work, and was willing to complete the driveway. Officers of the road decided to wait until more favorable weather, however.

The office of Harry B. Towles & Company has been closed for the winter, but will be reopened bright and early in the spring. Mr. Towles is taking a respite from work, devoting much of his time to figures on new contracts coming up during the next couple of months.

Foundation work is proving a profitable line for the Western Concrete Construction Company, several contracts of value being on hand; with others waiting to be filled.

R. L. Proctor will represent concrete workers on the directorate of the Nashville, Tenn., Builders' Exchange, having been selected for the term of one year at the annual election of the organization recently. The election was an animated one, two strong tickets being placed in the field by the two competing factions, the "Reds" and the "Blues." Mr. Proctor is one of the best known concrete men of Nashville.

C. H. Daugherty, of Lexington, Ky., has begun the construction of concrete sidewalks on Oldham avenue from High street to Euclid avenue, in accordance with the contract recently awarded him. Sixteen cents per square foot was the price.

Two miles of concrete sidewalks are to be constructed at Cornelia, Ga., including all principal streets leading to the main school building. The mayor will receive bids on the work.

AN ATTRACTIVE CONCRETE BRIDGE AT METHUEN, MASS.

The recently completed "New Broadway Bridge" which spans the Spicket River on the road between Lawrence and Methuen, Mass., is an interesting example of what may be accomplished in bridge design with concrete when both utility and esthetic appearance are of importance. The bridge is a gift to the town of Methuen from Edward F. Searles, its most prominent citizen.

In designing the bridge the Aberthaw Construction Company of Boston, Mass., who also built it, followed the suggestions of the donor. It was desired to erect a structure that would serve the traffic needs of the town to the best advantage and at the same time add as much as possible to the appearance of that section. Mr. Searles did not desire anything elaborate or ornate so the bridge was designed with almost severe plainness. It is to its very severity of architectural treatment that much of the attractiveness of the bridge is due.

The bridge is 80 feet long from the end of one abutment to the other, and 74 ft. 2 ins. over all width. It has three arches, each 18 ft. wide placed on 22-ft. centers. The forms for these arches were detailed at the contractors' office so that there was no confusion nor delay on the job. The details of these forms are shown in the accompanying cut. The concrete footings are 5-ft. wide and the piers themselves 4 ft. thick. A 1:2:4 mix was used.

Across the central portion of the bridge run the double tracks of the Bay State Street Railway Co. On either side of the car tracks is a roadway, and flanking the roadways are two sidewalks 8 ft. wide. The width of the roadway from one sidewalk curb to the other is just 50 ft. The road is of macadam, and between it and the concrete bridge floor is a 3-ply waterproofing of felt and asphalt.

As will be seen from the photograph the parapet on either side of the bridge is without ornamentation being simply a wall with plain capping. The parapet was chosen in preference to an iron railing as it added enough to the artistic appearance of the bridge to pay for the extra expense. At either end of the piers is a small buttress of uniform cross

section which, despite its plainness, adds considerable to the appearance of the bridge. The surface of the spandrel and parapet walls are picked, while the edges of the arches, the floor and the parapet capping were rubbed smooth.

Provision has been made for four electric light posts, one at each buttress. When these are installed, they will add to the general attractiveness of the bridge.

In putting in the piers a small coffer dam of 3-in. matched sheeting was sunk into the gravel bed of the river, and the pier centering was hung from the horizontal sheeting braces.

A 16-in. water main that crossed the river at the bridge was provided for in the following manner: The pipe was carried on a 4-in. I-beam which rested on two trench braces at each pier. The braces placed side by side were expanded until the pipe was brought to the proper level. Then the concrete was poured around the braces and a permanent support at this level was assured.

MUCH CONCRETE CONSTRUCTION IN LOUISVILLE

Louisville, Ky., Jan. 17.—That many buildings of size were erected in Louisville during 1912 is indicated by the annual report of Building Inspector Tilford. While 1912 showed an increase of approximately half a million dollars over 1911 in the worth of permits issued, a decrease was registered in the number. But 2,379 permits were issued in 1912 as compared to 2,495 in the preceding year.

McDonald & Dodd, one of the best known architectural firms in Louisville, have decided to dissolve, both men having received flattering offers from the West. W. J. Dodd will connect with an architectural concern in Los Angeles, while Kenneth McDonald will be associated in business with his two sons at Los Angeles.

Following the return of M. W. Neal and James G. Caldwell, of the Louisville Board of Public Works, from inspections of New York, Baltimore, and other cities, it is reported that Beargrass creek, Louisville, is to be covered by concrete. The work, it is said, will be patterned after the covering of Jones Falls creek, Baltimore. It is proposed that a franchise for a railroad be sold, giving the Louisville & Nashville competition into the heart of Louisville.

The Standard Sanitary Manufacturing Company will erect an eight-story fireproof warehouse at Seventh and Shipp streets, as soon as plans are drawn and approved. The building will probably be of reinforced concrete, and will cost about \$60,000. B. B. Davis is the architect.

Reinforced concrete coal chutes of the bucket hoist type are to be erected at Danville, Ky., and Oakdale, Tenn., by the Cincinnati, New Orleans & Texas Pacific Railway Company. Each will have a capacity of 500 tons. Work will begin as soon as possible.

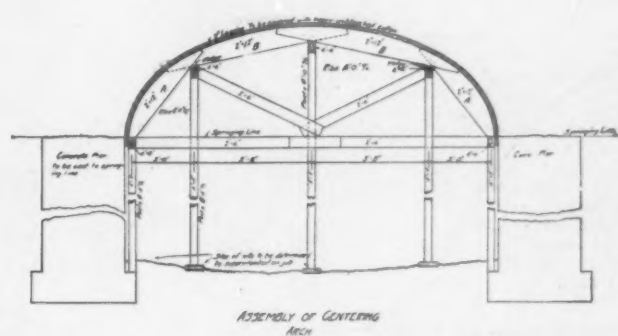
The National Concrete Construction Company, of Louisville, is finishing the sewage disposal plant at Waverley Hill, near Louisville. The contract involved about \$10,000. The same company is working on the roof of the Vendome Hotel at Evansville, Ind. The Cook brewery at Evansville, Ind., also will be completed shortly. The structure is 150x150 feet.

The National Theater, Louisville, will be contracted for shortly. It is to be of reinforced concrete construction and will cost \$250,000. Joseph & Joseph, Louisville, are the architects.

The Wells Bros. Co., Chicago, contractors on the new Y. M. C. A. building in Louisville, are using salamander as a means of insuring protection for concrete placed in the forms at rather low temperature.



METHUEN BRIDGE.



CENTERING ARCH OF METHUEN BRIDGE.

MINE TO USE CONCRETE SHAFTS.

Springfield, Ill., Jan. 20, 1913.—L. C. Bartelt, of Woodstock, who recently attended the National Cement Stave Silo Lessee's convention at Des Moines, Ia., is planning an active campaign for spring and summer business throughout Boone and McHenry counties.

The Illinois Post Company, of Springfield, has been incorporated, with a capital stock of \$30,000, to manufacture fences and telegraph posts with concrete bases and wooden tops. B. F. Bliss is president, Frank Thomson secretary, and B. E. Taintor, a practical concrete contractor, is treasurer. T. J. Noblett is general manager. It is planned to erect a factory in Springfield soon and later some branches may be established.

Edward Cooney, proprietor of the Concrete Construction Company at Tremont, is making a trial of motor trucks for transporting material and tools, having purchased a new two-ton automobile.

The Bunsen Coal Company, of Danville, will use much reinforced concrete in its new modern mine to be opened soon. The main shaft and the air shafts will be of concrete and that material will be largely used in the entries.

MANUFACTURE OF CEMENT TILES IN GERMANY.

The Germans undoubtedly are doing excellent work with cement, converting it into forms of every possible description and producing imitations of many classes of stone and tiles. The confidence of German builders in cement for all purposes seems to be boundless, and they are willing to erect lighter structures than architects in the United States.

The ordinary cement building blocks of this country are more or less the same as building blocks in the United States. The highly-colored flooring tiles are exceedingly attractive, the chief complaint against them being that where traffic is heavy, the colored surface sometimes is worn off and the bare cement exposed. One German machinery manufacturer claims that his devices can turn out 1,000 roofing tiles at a total cost of \$10, the composition being 1 part cement and 3 parts sand, and the division of cost being as follows: One and one-fourth cubic meters (1.63 cubic yards) of sand, \$0.60; 300 kilos (661 pounds) of cement, \$3.57; wages, \$4.28; cement color, \$1.19; oil, interest, and breakage, \$0.36.

One of the biggest pieces of construction at the present time in which cement is the one great factor is that of the large dam across the Mississippi river from Keokuk, Ia., to Hamilton, Ill. It stretches for almost a mile, and contains 7,000 tons of steel, containing approximately 700,000 barrels of Atlas Portland cement. The dam is the second largest undertaking of its kind in the world and its magnitude cannot be appreciated by a casual glance. The many points which enter into the building of such a dam—flood gates, ice fenders, etc., and also the general description of the dam—are contained in the booklet "Harnessing the Mississippi" which is being issued by the Atlas Portland Cement Co., 30 Broad Street, New York City. Many reproductions from photographs of the dam proper and its detailed parts are contained in the booklet; also a table of the report of the Pittsburgh Testing Laboratory of the Atlas Portland cement which is being used in the construction of this mammoth piece of work.—Advertisement.

Austin, Texas, Jan. 18.—The commissioners' court of Galveston county has adopted a resolution requesting the state legislature to submit to a vote of the people a proposed constitutional amendment which would permit the organization of what is to be known as the Seawall Improvement District in that county, and the issuing of \$5,000,000 of bonds for extending the reinforced concrete seawall so as to afford additional protection to the people and property of the district which is to be created. It is stated that the proposition will meet with no objection in the legislature. It is thought the constitutional amendment will have been adopted within the next few months and construction work started on the seawall extension.

The Lantry-Shark rock quarries situated near Belton will soon be reopened. Improved equipment will be installed and employment given to about 125 men.

The Phoenix Portland Cement Company has increased its capital stock from \$400,000 to \$750,000, and will use the money to enlarge and increase the capacity of the plant.

CONCRETE WAREHOUSE.

Irvin & Witherow has completed concrete work on the new Kelly wholesale drug warehouse at Ninth street and Duquesne way, Pittsburgh, Pa. This building has many unique features. It was constructed along very progressive lines, the cantilever design being used. The building is exceptionally strong and has a slight arched effect which produces a ceiling throughout the entire interior of the building without any additional expense. The basement is flood-proof. The basement floor was reinforced against the upper pressure of water and is 12 inches thick in the thinnest portion. The building stands on 510 concrete piles 16 inches in diameter and set at a depth of from 25 to 50 feet. It is designed to carry a working load of 250 pounds per square foot. There is a big concrete vault on the first floor and the building is probably the best example of the strictly up-to-date reinforced concrete warehouse to be seen in Pittsburgh. Three other large concrete warehouses are also under way in the city at present.

TO CONTRACTORS.

The Department of Commerce and Labor, Lighthouse Service, office of Lighthouse Inspector, 4th district, Room 427 P. O. building, Philadelphia, Pa., will receive sealed bids up to Feb. 15, 1913, for rebuilding Brandywine Shoal Lighthouse, Delaware Bay. Bidders on the alternative reinforced concrete design for Brandywine Shoal Light Station must accompany their bids with detailed drawings and specifications for this concrete structure, the general outline of which will conform to the Government plans; due regard being given to changes that will be necessary in a concrete structure. Write for information.

CONCRETE FOR RAILROAD TIES.

Lewis Hill, president of the Great Northern Railroad, paid a visit to the cement show at the Coliseum Tuesday and declared that the growing use of concrete railroad ties would do more to eliminate train wrecks than any other factor. Mr. Hill is an enthusiastic cement man and is using the material on his railroads to a large extent. He said eventually concrete would replace the old fashioned wooden tie and that when his present plans are consummated the Great Northern will have concrete ties from Minneapolis to Seattle.

At the stockholders' annual meeting of the Ideal Cement Stone company the same directors and officers were re-elected: N. J. Peterson, president and manager; P. J. Denison, vice president; Charles Peterson, secretary; E. M. Carson treasurer. These and J. A. Pearson are directors. It was decided to immediately enlarge the capacity of their factories to meet the growing demand for cement building stone.

The National cement vault, which was exhibited by the Norwalk Vault Co., of Norwalk, Ohio, at the Chicago Cement Show, is a product of concrete which is of considerable interest and merits close attention. The vault is steel reinforced, germ and waterproof, artistic and everlasting. Molds and territorial rights are for sale by the Norwalk Vault Co., and thorough and detailed information may be had by application.

A member of one of the largest building contracting firms in Chicago called at the booth of the Eberling Cement Machinery Co. one day during the Chicago Cement Show, and in talking with Mr. Bleasdale, vice president of the Eberling company, stated that he regarded the "Eberling" as a wonder, which marks the beginning of a new era in the cement field. He believed that it is not only a money and labor saver but that the machine is designed and built for long and hard service.

The grinding mill of the Ohio Marble Company at Piqua, Ohio, was destroyed by fire in December, and is being rebuilt entirely of concrete. A. Acton Hall, president of the company, was absent in Cincinnati at the time of the fire and immediately returned to Piqua to begin the rebuilding of the plant.

The National Cement Brick Company of Wilmington, Del., has been incorporated with capital stock of \$500,000. The incorporators are: Herbert E. Latter; William J. Maloney and Norman P. Coffin, all of Wilmington, Del.

The McKay Concrete Form Company, of 730 West street, Sewaren, N. J., has been incorporated with capital \$10,000. The incorporators are: S. R. McKay, E. B. Yarnall and R. T. Wales, all of Sewaren, N. J.

SUDDEN PASSING OF FRANK L. KINNEY.

Frank Leslie Kinney, only son of James and Helen (Garvin) Kinney, was born at LaFayette, Stark county, Illinois, August 16, 1870, and closed his eyes in eternal sleep at his home in Toulon, Ill., at about half-past one o'clock on the morning of Thanksgiving Day, November 28, 1912, aged 42 years, 3 months and 12 days.

When the announcement of his death spread through the community at an early hour on Thursday morning, it came as unexpectedly as a peal of thunder from a cloudless sky.

Only the day before he had been greeted on the street in his accustomed health and vigor, and the news of his sudden passing during the night was a profound shock to his many friends and acquaintances in this city and elsewhere, and plunged his family and other relatives into deepest grief.

Beyond the presence of a pain in the head, from which he suffered somewhat on the previous day, but which he treated lightly, there was apparently nothing in his condition to cause himself or family any uneasiness when he retired for the night and fell asleep; but about one o'clock he was suddenly stricken with hemorrhage of the brain, and, although a physician was called as quickly as possible, he was beyond medical aid, and in a short time breathed his last, without regaining consciousness.

At the age of 14 years the deceased was bereft of his mother, who died June 1, 1884, at LaFayette. Soon afterward he moved with his father's family, first to Chillicothe, and later to Wyoming, Ill., in which last named city he attended the High School and graduated with the class of '88.

In the following year he went to California, where he remained five years. Then, returning to Illinois, at Toulon, he filled the position of deputy circuit clerk and recorder during the incumbency of his father in that office.

Later he went to Chicago, where he obtained with Armour & Co. his first position as traveling salesman. Developing a particular aptitude for that line of business, his services grew steadily in demand, and he was promoted successively.

For a number of years he was with the American Asphaltum & Paving Co., leaving their employment several years ago to take the position of head salesman for the Ohio Sandstone Co., which he continued to hold up to the time of his death.

In the pursuit of his business he formed a wide acquaintance over the state, and by his genial ways established many warm friendships, a fact attested to by the large number who journeyed to his home city to pay a last tribute of respect to his memory.

On the first day of March, 1899, deceased was united in marriage with Miss Florence I. Brace, daughter of Orlando and Lucy A. Brace, at Toulon. This union proved an exceptionally happy one. Their home life was ideal. Around their fireside love ruled supreme, and each succeeding year seemed to strengthen the ties that bound them in sweet companionship.

Two daughters, Frances, aged 12, and Helen, aged 10 years, are left with the bereaved wife to mourn the loss of a husband and father whose love and tender solicitude never wavered nor grew cold.

The first years of their wedded life were spent in Chicago; later they lived in Peoria for a year or more, and for the last ten years they have resided in Toulon. During the past year they have found much comfort and happiness in improving and beautifying a permanent home, which they fondly hoped to enjoy together for many years yet to come.

The deceased is also survived by his father, James Kinney of Toulon, and three sisters, Mrs. E. G. Eltzroth of LaFayette, Mrs. Henry Rawstron of Chicago, and Miss Lois Kinney.

Few indeed have been more generously endowed by Nature than was Frank L. Kinney. Possessed of a genial and kindly disposition, pleasing address, unflinching courtesy and affability, whole-souled and open-hearted, he made friends unconsciously of those with whom he came in contact in daily life.

There were no cloudy days in the lexicon of his life. He looked on the sunny side, and there is comfort in the thought that many lives have been brightened by the sunshine of his companionship.

It is sad to think that one like he, in the full flower of early manhood, surrounded by all that makes life dear, whose being held so much of usefulness for the present, so much of promise for the future, should be cut off so suddenly and so untimely.

"Leaves have their time to fall,

And flowers to wither at the North wind's breath;

But thou hast all

Seasons for thine own, Oh, Death."

SIXTH ANNUAL CHICAGO CEMENT SHOW

The Sixth Annual Chicago Cement Show opened in the Coliseum January 16, under most auspicious circumstances. Every space in the great building was filled with exhibits of machinery and materials designed for the use of the production of concrete and the uses of cement. It is by far the greatest effort of the Cement Products Exhibition Company, and the most practical and useful show that has ever been offered to the public.

The decorations of the Coliseum were simple but extremely attractive, the vault of the roof being made glorious with the National ensign, caught into graceful loops. The uniform decorations of the hall were in white and green and were effective and pleasing in the general effect, as the visitor casts the first comprehensive glance from the entrance door at the exposition of materials and appliances which stretch before him.

There were literally acres of interesting, attractive and instructive competitive exhibits, showing all of the uses of cement in the various lines and qualities of concrete, as well as the handling and marketing of cement.

BIG CROWD OPENING NIGHT.

The cement show opened with the largest attendance that ever honored such an occasion. Not even the great record night of the New York Cement Show in Madison Square Garden, which was the record until now could equal it. More than twenty thousand people were in the Coliseum during the opening session. Not only was the main floor and annex filled with people, but the great encircling galleries were filled to overflowing. It was a moving, good-natured crush, of which the individuals only stayed a short time, so that Wabash avenue for two blocks north and south of the Coliseum was filled with people attracted by the cement show. The line of autos along the curb extended for blocks, so that it was with difficulty that the street could be kept open. It was the first opportunity ever enjoyed by Chicago shows to really turn out good and proper, for heretofore it has always been zero weather with all of the attendant drawbacks. It is safe to say that everybody who attended the show the opening night had to come again in order to get a more lucid idea of the things which interested them most. The crowd clearly demonstrated the general popular interest taken in the king of all structural materials, Portland cement, and its multiform uses. Those who have attended cement shows in the past realize that there is always more to see—more to learn of the wonderful and ever-growing subject of building with imperishable cement.

In the whole list of the materials of construction, Portland cement is the most wonderful, the most attractive and the most important. Years ago the first uses of Portland cement were found to be confined to the heavy improvements, used by railroad engineering and municipalities, along with the mammoth engineering undertakings of the government. Later to these uses was added a new vista, which came about when cement was introduced as the principal structural material for incombustible buildings of larger type, such as factories, warehouses and the permanent improvements of such public institutions as parks, hospitals and other public buildings. Later, cement has been introduced upon the farm, in a long list of new uses, which have in the past been considered the expense of operating a well kept farm. These, by the use of cement, have come to be considered as permanent improvements, adding to the established wealth of the farmer rather than increasing his responsibility and liability for expensive up-keep.

The great road problem which has been discussed for years is rapidly meeting its solution by the introduction of the concrete road, and the latest improvements have shown that even the humblest dwelling may be built of concrete made from Portland cement, quite as cheaply as the less permanent wooden house; so that concrete has become in the last decade the greatest modern factor of advancement, and marks the boundary line of the progress of civilization itself.

Practically each and every one of all of these uses of cement was exhibited in the Cement Show at

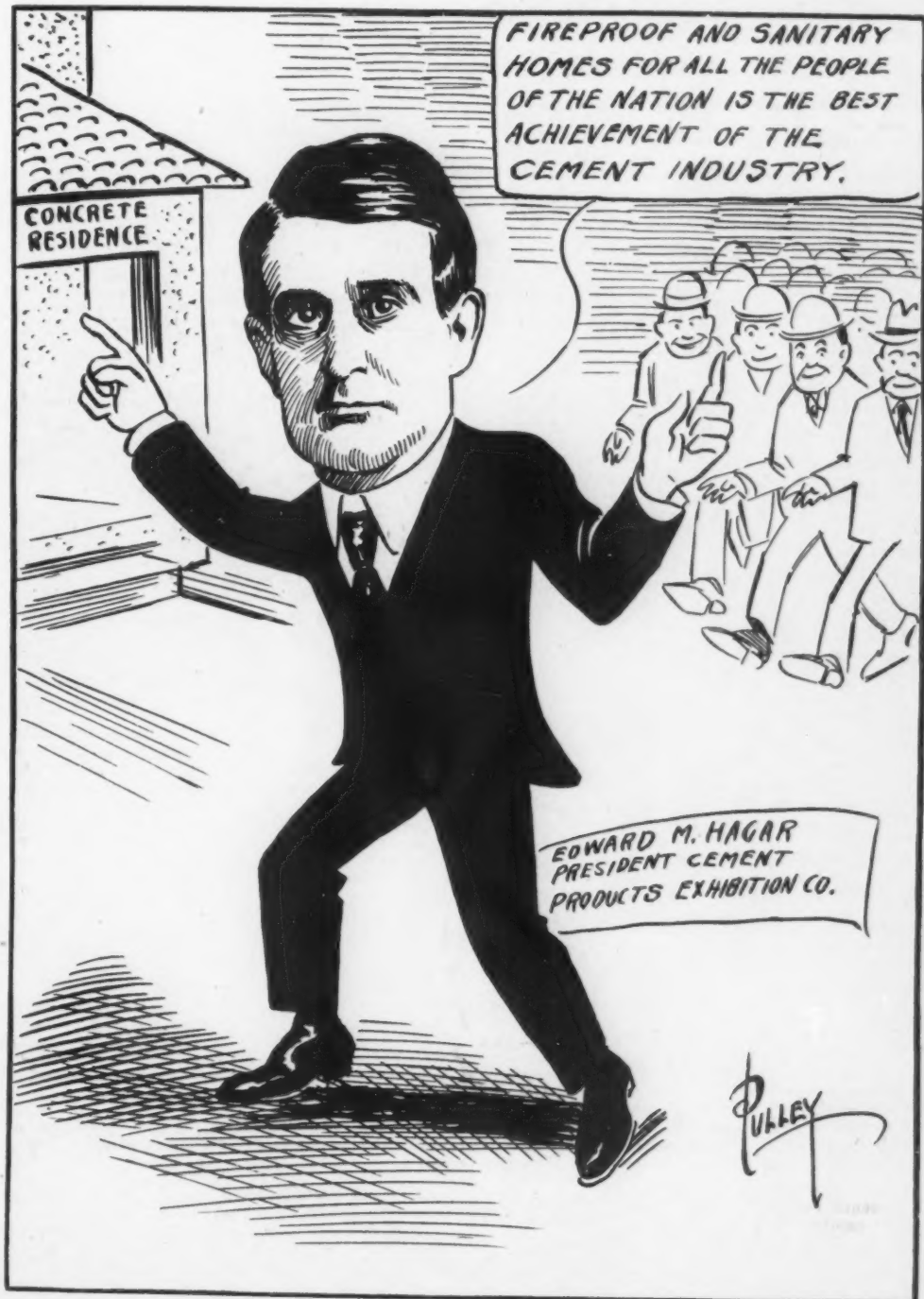
the Coliseum. Some of the exhibits were of a technical nature, consisting of the steel reinforcement which is used to supply tensional factors to concrete beams, columns and slabs. Those parts of concrete construction, which are concealed from the casual observer in the finished work, but which are the principal source of study to the engineers, should use cement in the construction of almost every kind of building.

These technical displays were of especial interest to the architect and the engineer who understand them best, and were at the same time attractive to the general public as object lessons of the great amount of study which such undertakings necessarily entail. There were exhibits beautiful to look at, exemplifying the decorative features of concrete construction, which are easily understood, because they are familiar in the shapes as seen in finished work. These exhibits are comprehensive, demonstrating that the limitations for decorative treatment in concrete construction are those of the taste of selection, for it was possible to select from those things shown in the Coliseum, an entire building of practically any type of design by the simple process of selecting an assembly and having it all fit and worked out to perfection.

That most desired and most important feature of concrete construction, viz., the building of the home for the great masses of people, was exhibited in several ways. There was the actual construction of building, typical walls, while the observer watched the operation, a foot of wall being made every few hours while the crowd watched the operation. In the Annex, a real section of a house was exhibited complete in every particular, built of hollow concrete tiles. It was erected in a single day for the purpose of showing a finished job of such construction as a commercial proposition.

In another place machinery was on exhibit for the testing of road and street construction, which has always been one of the unanswered questions in the past. The art feature of the exhibit was not less than that of the five preceding shows, and at the same time it was more practical and better defined than any Cement Show has ever yet offered.

To sum up the whole matter in one expression, the sixth annual Cement Show was more perfect, more practical, and in every respect the best obtainable exposition of the development of the concrete industry and the important uses of cement, than has ever been offered for the inspection of the public up to the present time.



PRESIDENT HAGAR LEADS THE PROCESSION.



J. P. BECK, GENERAL MANAGER CEMENT PRODUCTS EXHIBITION CO., CHICAGO, ILL.

THE HIGHEST TYPE OF HOME.

The largest exhibit of the cement show—the one that attracted the attention of the greatest number of visitors was the “cosy home” built in the annex of the Coliseum. It was the largest exhibit ever shown in any cement show, and expressed the largest thought of the cement industry—the greatest theme possible for the contemplation of the promoters of a building material like Portland cement.

It appealed directly to every normally developed human being as the initial and chief interest of all civilized mankind in the building idea. The first step made by the aboriginal man in the direction of civilization was to make a shelter (no matter how uncouth it might have been) from twigs and leaves to protect his family from inclement weather and burning suns. That sentiment which prompted the first step has grown with the development of civilization, and has always taken its signature from the type of homes in which men lived in all the various stages from barbaric beginnings to the modern comforts and conveniences—even to the typical “cosy home” elevation shown at the cement show.

This exhibit was a serene assertion to the effect that the latest improvements, the highest and most valuable attainment in home building can only be secured by the use of Portland cement products and concrete. It was entirely constructed of incombustible materials, the foundations, walls, partitions and floors were built of hollow concrete tile, laid up with cement mortar and cement plaster finish throughout; the roof was of cement asbestos shingles. So that it was safe from fire danger and risk—vermin-proof and sanitary beyond comparison, and more economical to maintain than any other kind of home. It is a permanent safe investment with the full value always in evidence, and last but not least the first cost is no more than that of ordinary construction which would be lacking of all of the advantages enumerated.

The “cosy home” elevation was not a rare and astonishing exhibition of some extraordinary achievement of engineering practice in its highest expression or the difficult work of specially skilled and instructed mechanics. But it was an illustration of just what every home builder can secure with the same money that would otherwise secure him much less value in any other way in the erection of a home.

The building was constructed by George H. Fox & Co., contractors of Chicago, who purchased every part of the materials from business establishments of this city who have the same goods to supply to an unlimited number of purchasers in the ordinary commercial way. In fact this highest type of home is within the reach of all who are prepared to provide themselves with a home of any kind.

Bert Swett, the affable representative of the Lehigh Portland Cement Co., with headquarters in New York, N. Y., has arrived at the show. Bert is a regular attendant at all the cement shows and his presence is always awaited with pleasure by his host of friends.

THE PAVING DETERMINATOR.

One of the most interesting exhibits at the Chicago Cement Show was that of the paving determinator at the south end of the Universal's display. It is owned by the city of Detroit, and was designed by J. C. McCabe, city engineer of Detroit. It consists of a long shaft at either end of which are two large wheels weighing 1,350 pounds each, the entire arrangement revolving around a central axis at a rate of 3 1/4 miles per hour. On the inner circumference of the wheels are numerous iron horses' hoofs working on springs with a pressure of 250 pounds on each hoof. This is the first time the exhibit has been out of Detroit, and is an abrasive test determining which kind of material will stand up best under the action of heavy traffic. The platform on which the wheels revolve consists of two sections of macadam, two sections of brick and six sections of concrete. Four sections of the latter is a 1-1 1/2-3 mixture of crushed limestone and two of crushed granite. Two have Baker protection plates. One of the two sections of brick is Metropolitan and the other is Champion, both set in mortar and grouted in with cement and sand. The test is a 13-hour run equivalent to 20 years' wear on the pavement. The exhibit was in charge of J. C. Donaldson, of the Universal Portland Cement Co., and was given under the auspices of that concern.

UNIVERSAL SACK CABINET.

At booth 131 the Universal Portland Cement Co. has on view bulk cement in cement bin; 16



FRED C. PRINTY, GENERAL SALES MANAGER, SANDUSKY PORTLAND CEMENT CO., SANDUSKY, OHIO.

sacks of piled cement; a wheelbarrow of bulk sand a wheelbarrow of bulk cement. Charles S. Fletcher, who does not appear to get much rest nowadays, explained that the idea is to get the Universal's customers to take the cement in bulk, demonstrating to them that they will save money by receiving bulk cement, as when shipped in this manner the material does not have to go through the maneuvers incident to the transportation of cement in sacks.

The Universal also shows a sack cabinet for dealers' warehouses, the top shelf of which is for holding worthless bags; the second shelf for holding bags of other companies; the next three shelves being built to hold 50 sacks each. When the shelves are filled the bundles of 50 are tied and tagged and thrown into a bin underneath the cabinet, which is capable of holding 10 bundles, or 500 sacks. When the bin is filled the dealer can then ship the sacks to the factory. A table is placed conveniently in front of the cabinet for bundling the sacks. The sack cabinet proposition is the idea of Mr. Fletcher, chief clerk of the accounting department of the Universal, and the plan is certainly worth carrying out by all cement dealers. Mr. Fletcher has the assistance of C. N. Dubach, who is a competent plugger, and can always be found on the job.

Another novel feature of the Universal exhibit at booth 131 is a revolving frame showing sacks which have been soaked with water; sacks that have been abused on the jobs; sacks that have

been used for carrying paint; sacks destroyed in opening by being slit with a shovel; sacks showing bad mending by customers, and sacks which have been patched with the names of two brands appearing. On one of the frames is shown a sample of good mending done by the Universal. Photographs of sack warehouses of the Universal are to be seen depicting the manner in which bags are counted and stored at their various plants.

At booth 110 the Universal have their inspection bureau showing the different aggregates to use for mixing cement for houses, sidewalks, etc., and the importance of carefully selecting aggregates in concrete work is also demonstrated.

THE RECLAMATION SERVICE.

The illuminated exhibit of pictures in colors of the engineering details of the United States Reclamation Service in the far west attracted a big crowd of visitors all the time. The retouching of the photographs for the transparent effects were splendidly done. Those people who have visited the land shows and listened to lectures upon the work of reclaiming arid lands seemed to understand these pictures better than others, and the interest awakened at the land show was revived and much discussed. This work would have been well nigh impossible but for the application of cement engineering, and its signal success is another endorsement of concrete as applied to such mammoth public undertakings.

This service is bringing new areas of land into possible homes and farms for the land-hungry immigrants who are still coming to our shores in great numbers.

CONGRATULATIONS.

The Sixth Chicago Cement Show under the auspices of the Cement Products Exhibition Company has surpassed in attendance any previous exhibition of the kind in the country's history. This may be credited to the fact that the officers of the company on this occasion have been able to put into practice the lessons gained in previous show experiences, and the exhibitors likewise have learned how more effectively to arrange their displays.

No reason exists why the Chicago show should not continue to be an educator of the public in the uses of cement in the Middle West, and here is to its success.

It becomes us to offer to the officers of the Cement Products Exhibition Company our congratulations for the smooth manner in which the show was conducted, for the pronounced effectiveness of the educational features. We may also congratulate the exhibitors for their enterprise and the visitors for the increased knowledge of things concrete they have gained this week.

And, finally, let us express the hope that each one may enjoy the fullest measure of success during the year and do his share in advancing the industry with which he is identified.

The cement show would not be complete without the beautiful little columns and other examples of molds of the Simpson Cement Mold Company.



HAROLD M. SCOTT, GENERAL SALES MANAGER, LEHIGH PORTLAND CEMENT CO., CHICAGO, ILL.

AMONG THOSE PRESENT.

Harry S. Doyle, of the American Steel and Wire Co., the uatriarch of "guaranteed fool-proof" triangle mesh reinforcing, came into the Coliseum Friday afternoon. The doctors have had him in the hospital but he succeeded in getting away from them to attend the show. No Chicago cement show would be complete without him, for he reinforces the whole plan.

Frederic Kensel, the champion demonstrator of hollow concrete tile, was constantly surrounded with a crowd of contractors and builders who already have some experience with the use of this wonderful material. The contractors brought their customers up to Mr. Kensel and then it was all up to taking the order.

"Eck," of the Lehigh sales force, was taking in the show with a bunch of friends Friday. More properly his name is W. H. Eccles and he is an old war horse in the cement business who always bobs up serenely.

Among the early arrivals were C. H. Greenleaf and I. J. Sweetser of the Chicago Portland Cement Company, who had been entertaining the Northwestern Lumbermen at Minneapolis.

Jas. B. Herring, of the Ottawa Silica Co., who produces standard testing sand, visited the show Friday and met lots of friends among the visitors.

J. C. Buckbee, of J. C. Buckbee & Co., manufacturers of gravel washing plants, was an interested visitor at the show Friday night.

The "Chicago AA" boys expressed disappointment at the absence of Percy H. Wilson and others of the Association family.

The Ohio Post Mold Co. held the fort with that high grade post which has made them famous throughout the country.

Fred Paulson, general traffic manager of the Lehigh, says the show looks just the same as ever, only a little more so.

Mr. Charles S. Fletcher, of the Universal Portland Cement Co., made a visit to the Rock PRODUCTS booth Friday evening.

Frank E. Beam, of the United Tile Co., had his bag tye on exhibition and made you say "glad you kum."

There was quite a crowd around the Universal concrete house on Saturday evening. It was a wonderful sight to see the newly married couples clamoring for information on the cost of such a residence. Some of them seemed to think that by living in a concrete house they would save on the coal bill, and as we are from Missouri we would like to be shown. Incidentally we may

mention that some of the older people were interested in concrete furniture, explaining that they wanted to buy something which could be knocked around without danger of breakage.

Samuel J. Cogan of the T. L. Smith Co., manufacturers of the Smith Mixers, the Chicago Mixers and the Sterling Wheelbarrows was one of the familiar figures circulating around the Cement Show shaking hands with a host of friends who would have felt disappointed had he been absent.

Ed Buehler of New York, the biggest thing in all Long Island in material lines, was with us just looking the show over, as it were. His curb reinforcing irons have helped to give him a national reputation. He was on hand to meet old customers and make new ones.

The versatile Frank Adams Mitchell, who knows how to write good poetry, sell good belts and be a good fellow, grasped the opportunities offered at the show to demonstrate his ability at all three lines of business.

As a propounder of forceful arguments we have to hand it to Charlie Bradley, of the Anchor Concrete Stone Co. One day when in the midst of his business-getting confabs, he shot an unusually strong one over and the steel tower fell down.



W. E. COBEAN, WOLVERINE PORTLAND CEMENT CO., COLDWATER, MICH.

The Standard Scale & Supply Co. showed a full line of their standard low charging mixers at booths 213-214. Frank Christopher, who looked after the Eclipse cement block machine, made in Wichita, Kan., and handled by the Standard Scale & Supply Co., says that they took some orders for this machine and prospects are very good for more business.

J. P. Beck, general manager of the Cement Products Exhibition Company, should be complimented on the attractive manner in which the exhibits were arranged this year. Mr. Beck gave every detail his personal attention and the result was a credit to his expert judgment and taste.

The quarter-size model of the "S-A" improved pivoted bucket carrier for handling cement clinker, coal, ashes, etc., manufactured by the Stephens-Adamson Mfg. Co., of Aurora, Ill., was shown at booth 133, and attracted large crowds all the time.

Bill Kinney blew in from Pittsburgh early and the Universal booth was made brighter. Kinney gave a very interesting and instructive talk on the manufacture of Universal Portland cement in the Coliseum theatre one afternoon.

L. V. Thayer, who was in daily attendance at the Cement Show, became homesick for his chicken farm. Lew has some choice fowls up at Minneapolis—so choice, 'tis said, that he feeds them on hamburger steak and Quaker oats.

Fred J. Cassidy again exhibited his football proclivities by deftly kicking a lady's muff clear of a surface car on Clark street last night. Fred brings all his resources into play to please the fair sex.

Our genial friend Geo. M. Thompson, representing the Canada Pebble Company, Ltd., Port Arthur, Ont., was among those present. Mr. Thompson is always on the job in the interest of his firm.

Those who called upon Ernest L. Vogel, Sr., at the W. H. Salisbury Company's booth were told a number of particularly interesting facts concerning leather and rubber belting.

Sauerman Bros., agents for the Shearer & Mayer Dragline Cableway Excavator, had a miniature demonstration of their excavator scooping up the sand.

Chicago Manager H. C. Morrison, of the McCormick Waterproof Portland Cement Co., St. Louis, Mo., was in daily attendance at the Big Show.

The American Steel and Wire Co.'s wonderful triangle mesh reinforcement was presented by Mr. Allen, who did the honors very attractively.

The Universal Crusher Company had a very interesting exhibit, showing several of their crushers in operation.

Barrett Manufacturing Company exhibited their various roofing materials.



J. U. C. McDANIEL
GENERAL SALES MANAGER CHICAGO PORTLAND CEMENT COMPANY

Samuel Eccles Young, the energetic young representative of the National Bureau of Standards, held up well under the arduous duties in connection with the exhibits in the several booths of the bureau.

Some innocent visitor tried to buy a tie for a dress suit from Frank Holland at the United Wire Tie Booth, but F. E. Beam refused to allow Frank to sell the man a wire tie, even though "it saves time."

One of the bright lights at the "Chicago AA" booth was Mr. Arthur A. Stade, otherwise "Double A" Stade, who travels southern Illinois for the Chicago Portland Cement Company.

Wm. Bennowitz of the Edgar Allen Manganese Steel Co., of Chicago, mixed it up with his long list of friends at the big show. "Benny" was on the job every minute.

C. O. Frosell, of Frosell Brothers, engineers and builders, assisted Read & Morrill in demonstrating their steel forms for poured houses, etc.

A. C. C. Conkrite, L. E. De Garmo and J. C. Larimer, with the Universal Portland Cement Company, were "some" hustlers.



J. C. VAN DOORN, MINNEAPOLIS, MINN.

The Universal Portland Cement Co. established a small theater in the annex where illustrated lectures were given hourly during the show by people of national reputation upon the uses of concrete. The admission was free to all the lectures, and it was a mighty big feature from the educational standpoint.

Frank Holland of the Woodville Lime and Cement Co., who is the world beater salesman of white finishing hydrate of lime, worked at the show in cement posts and bag tying machinery, as well as talking the virtues of hydrated lime. If there ever was a fellow who enjoys mixing up with a big crowd, that is Frank.

Friends of M. A. Browning, of The Standard Scale & Supply Co., will be glad to learn that the stork dropped a nine-pound baby girl at his home Wednesday, January 15, 1913.



W. A. FAY, EBERLING CEMENT MCHY. CO., CLEVELAND, O.

William Belknap Newberry, Cleveland, Ohio, assistant manager of the Sandusky Portland Cement Company, with headquarters in Cleveland, Ohio, was on the job Thursday, assisting his handsome and genial co-worker, Mr. H. D. Jenkins, at the booth of that concern.

Mr. F. M. Welch of the Webster Manufacturing Co. was a visitor at the show. Mr. Welch is the inventor of the "Cyl-cone Screen" for sand and gravel washing.

Chas. Kritzer, of the Kritzer Company, Chicago, visited the show Thursday night and called at the booth of ROCK PRODUCTS, where a big "welcome" sign always confronts him.

Read & Morrill exhibited their steel forms at Booth 106. Frosell & Landahl are the Chicago agents. Mr. Perry O. Read, of Brooklyn, was at the show to assist the local agents.

Big Ben Affleck, whose very presence makes people feel energetic, was enjoying himself in trying to keep things straightened out at the Universal exhibit. Of course that was impossible, for the features of the exhibit were so very attractive.

M. J. Williams, that cordial exponent of the crushing and pulverizing wing of the machinery industry, helped Rock Products to keep house Saturday.

J. D. Johnson, of the Canala Cement Company, was a visitor at the ROCK PRODUCTS booth.

Samuel Cabot, Inc., was well represented at the show by M. A. Potthoff and B. K. Taylor.

J. C. Van Doorn, of Minneapolis, the live-wire cement man of the Northwest, made the show have a bright spot as he sifted around the Coliseum.

Paul H. Negley, of the Troy Wagon Co., Troy, Ohio, had a fine display of road contractors' heavy duty wagons. They are the standard of the industry.

O. A. Wakeman, of the Universal selling force, was the busiest man on the job Friday.

W. E. Cobeau, general sales manager of the Wolverine Portland Cement Co., was a visitor at the ROCK PRODUCTS booth Friday. Bill is looking like a ten-time winner.

Edward H. Ball, Jr., and John Gannon, of the Chicago Belting Company, were in regular attendance at the show, and helped to attract belting prospects to booth 129.

Miss Broughart, of the Lehigh Portland Cement Co., and several of the office men, were much pleased with the Cement Show. A. H. Eccles is always pleased. He was there also.

Frank Whipperman, secretary of the Nebraska Cement Users' Association, attended the Chicago Cement Show, and said it was a great show. He stated that conditions out his way were splendid and that most of the spaces for the show to be given by his association were sold. He says that prospects are bright for the sale of machinery, there being a good market for it.

Sneeze No More! C. L. Carman, M. E., Chicago, was there introducing his patented apparatus for the control of dust in cement mills. The Chicago Portland Cement Company was numbered among the manufacturers whom he called upon.

"Double A" Stade and I. J. Sweetser entertained a party of thirty-four dealers and contractors from Milwaukee, all of whom were well satisfied with the show in general and the concrete work on display at the "Chicago AA" booth in particular.

The Bates Valve Bag Company was filling and tying bags at a rapid rate at booth 136. R. M. Bates was on the job to explain the Bates system.

At the booth of the Standard Scale & Supply Co. there was hum and bustle. J. Simpson, L. P. Boyles and W. A. Browning were among the busiest persons at the show. A great crowd could always be observed around the booth watching the mixers in operation.

A great deal of credit is due M. E. Gordon, installation manager of the Cement Products Exhibition Company, for the well arranged exhibits.

The booth of the Eberling Cement Machinery Company, Cleveland, Ohio, was constantly the source of great interest to the visitors to the show. A great crowd of spectators thronged about the exhibit, and W. A. Fay says that everybody is happy and glad they came to the show. Tuesday was their biggest day and they closed several options for large territories.

J. J. Urschell of the Woodville Lime and Cement Company and many other business connections was there with his bag-tyer and post-mold outfits. Jake wore that kind of a smile that makes you "glad you kum."

W. T. Chollar, manager western sales department of the Atlas Portland Cement Company, in company with F. A. Schmoeger, who represents the same company in Illinois, attended the show Saturday night to do the honors for the big Atlas amongst visitors and exhibitors.

L. M. Knowles, George Schaffer and E. J. Bement were in charge of the Novo Engine Co.'s booth, and were kept busy explaining the merits of the wonderful little Novo engine.

E. A. Velde, manager of the Universal Crusher Company of Cedar Rapids, Iowa, daily entertained crowds at his booth, 180-184, with demonstrations of Velten Universal "Force Feed" Crusher and getting orders galore. Velde is irresistible when he demonstrates his popular crusher.

Mr. Charles Hoover, of Taylor Wharton Iron & Steel Co., attended the show. He carried around a piece of 103 Tisco Manganese steel chain which had been running seventeen months if an application on a drive in a Portland cement plant where malleable chain is renewed every fifteen days.



B. F. AFFLECK, CHICAGO, ILL.

The sample of Manganese steel chain is just polished up and looks good for several times the life of the sample. Manganese steel chain has become the standard in nearly all Portland cement plants. Ask Taylor Wharton Iron Steel Co., High Bridge, N. J., for particulars.

Mr. J. E. Thiell was a busy man, but he always had time to explain the machinery of the Manitowoc Engineering Works.

Edward Quebbeman, of the Universal Portland Cement Company, handed his pasteboard in to the ROCK PRODUCTS booth.

The Universal Crusher Co.'s exhibit was at booths 180 and 184. The wonderful little crushers manufactured by the Universal company were objects of great interest to the visitors at the show. The Universal Crusher Co. recently consolidated with the Eureka Stone & Ore Crusher Co., of Cedar



W. T. CHOLLAR, WESTERN SALES MANAGER, ATLAS P. C. CO., CHICAGO, ILL.

Rapids, Iowa, and this gives the company one of the most extensive lines of small crushers in the world. E. A. Velde was in charge of the booths, ably assisted by W. D. Fellows and J. H. Cockfield.

The booths at the show were beautiful in design and arrangement and that of the Chicago "A A" Portland Cement Co. was of the first rank—an exquisite rose covered pergola. The booth was in charge of Mr. R. Crawford, assisted by Fred J. Cassidy, "Double A" Stade, R. W. Chambers, F. S. Phipps, L. P. Locke, J. H. McGill, E. A. Molan, R. Ehlen, F. E. Maple and F. H. Cull. Mr. Phipps only recently came with Chicago "A A" concern and is beginning to demonstrate that he is a hustler.

It certainly was some busy bunch at the several booths of the American Steel & Wire Company. Mr. O. T. Allen was in charge, assisted by D. S. Pease, Paul Fisher, Joe Schottler and V. R. Sladek.

Philadelphia, Pa., January 16, 1913.—The mills of the Coplay Cement Company, now under new management, have enjoyed a banner year. The Whitehall Company, at Cementon, has operated its mill at a maximum capacity since the reorganization of the company. The Lawrence mill at Siegfried, is running full pressure as usual and the mills of the Lehigh Company are going full blast. But one mill of the immense Atlas plant at Northampton is idle, on account of the scarcity of labor. It is possible that the two mills of the American Cement Company at Egypt, which were closed early in the summer by receivership proceedings, will start about the first of next month. While there has been no definite announcement concerning the date of resumption, the mills are in such shape that they could be placed in operation immediately. A large force of mechanics have begun changing the engines and other machinery of mill A, the oldest of the Lehigh Company. This improvement will require several months for completion. The Atlas Company has taken advantage of its inability to operate one mill by installing a new battery of boilers and modernizing all the machinery of the old mill. The Coplay Company is equipping its quarry with the largest machinery ever put up in the Lehigh region. An immense crusher and steam shovel are included in the improvements. While all these improvements may be a criterion of confidence, it is safe to say that the prospects are indicative of a banner year.



The Simple Phrase

"Customer Satisfaction"

is a positive guarantee for repeat orders.

Confidence is inspired by the quality
of goods you handle.

Write us.

Security Cement & Lime Company

Hagerstown
Maryland



SALES OFFICE:
Liggett Bldg., St. Louis



SALES OFFICE:
Long Bldg., Kansas City

THE Standard Brands

OF
Portland Cement

Lightest in Color
Highest Tensile Strength

ALWAYS UNIFORM

Always the same high quality. Prompt shipment guaranteed at all times and made possible, as each mill is located within switching limits of the two greatest railroad centers of the West. You are assured of your orders being promptly filled.

MANUFACTURED BY

Union Sand & Material Co.

ST. LOUIS
Liggett Bldg.

KANSAS CITY
Long Bldg.

MEMPHIS
Tenn. Trust Bldg.



Dealers Visiting the Sixth Annual Chicago Cement Show

to be held in the Coliseum, Chicago, January 16-23, 1913,
will again find "Chicago AA" Portland Cement
much in evidence.

Our Model Farm in concrete will be replaced at the coming
event, by a **Concrete Pergola**, of artistic design, and con-
crete products, including sun-dial, lighting standards, tables,
benches, urns, pedestals, etc., all made with

"Chicago AA" Portland Cement

You are cordially invited to visit our booth—
SPACES 89 and 98 MAIN AISLE

CHICAGO PORTLAND CEMENT CO., CHICAGO, ILL.
J. U. C. McDANIEL, Sales Mgr.

WETHRPRUFE

Open
Mouth

Bates
Valve



WATERPROOF

An Extra Heavy, Extra Strong
WATERPROOF PAPER BAG
For Cement, Plaster, Lime, Etc.

West Jersey Bag Co.

Camden, N. J.

Tell 'em you saw it in ROCK PRODUCTS

OTTAWA SILICA CO. Ottawa, Ill.

Washed-Steam Dried and Screened

White Sand

Unexcelled for { Facing Concrete Blocks
Ornamental Concrete Stone
White Plaster
Roofing
Exterior Plastering
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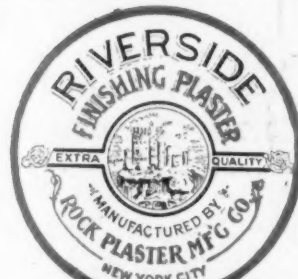
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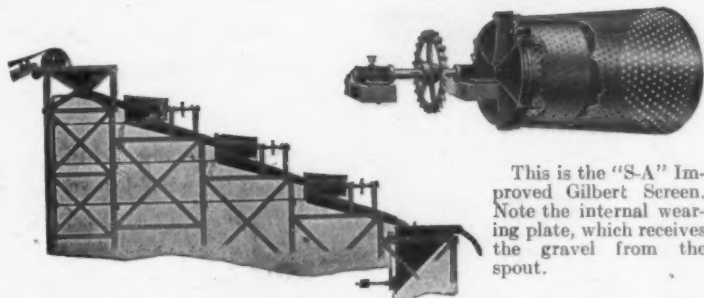
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Study the Layout of this "S-A" Gravel Plant



This is the "S-A" Improved Gilbert Screen. Note the internal wearing plate, which receives the gravel from the spout.

This shows a typical layout of an "S-A" Gravel Washing System. Gravel is delivered from the belt conveyor at the left into the first Gilbert Screen. This screen rejects the largest size to the bins and passes the fines into the next screen. This screen in turn rejects the next larger size and so on. The fines from the last screen pass with the water into the settling tank which rejects the clean sand to the bin and passes off the clay and silt in solution with the water. Note that

under this arrangement, the large stones are rejected first and thus relieve the screen of excessive wear. Also, note that the material must all be discharged *against* the stream of water insuring perfect washing of every particle rejected to the bins, and increasing the efficiency of the screens.

The "Labor Saver" during 1912 described 16 modern gravel washing plants

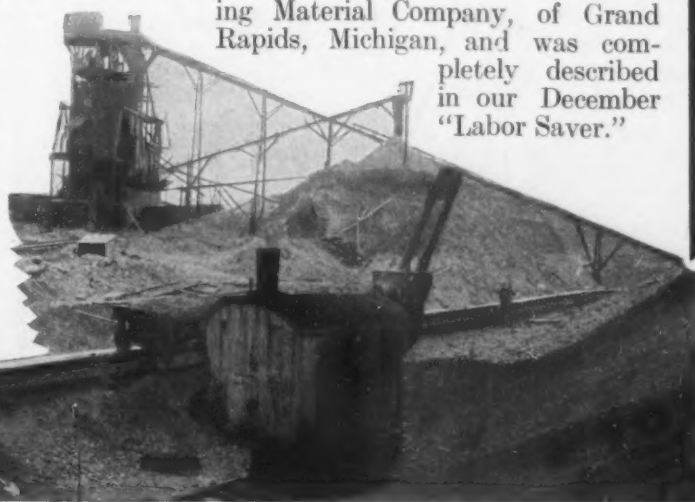
each one designed to meet certain local requirements. These 16 plants represented only our most interesting installations selected from a great many plants designed and erected by us. You can have the "Labor Saver" free if you're interested in the latest designs and improvements in modern conveying machinery. Send us your name and address.


Stephens-Adamson Mfg. Co.
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A travelling hopper on a portable "S-A" Belt Conveyor 300 feet centers serves the steam shovel. A 180-foot "S-A" Conveyor raises the gravel to the plant. Material rejected by the screens to the crusher is raised again to the main conveyor by a 98-foot "S-A" conveyor. Three sizes of gravel and one of sand are passed into the bins. This is an "S-A" Gravel Washing Plant designed to suit certain local conditions.

It is owned and operated by the Battjes Fuel & Building Material Company, of Grand Rapids, Michigan, and was completely described in our December "Labor Saver."





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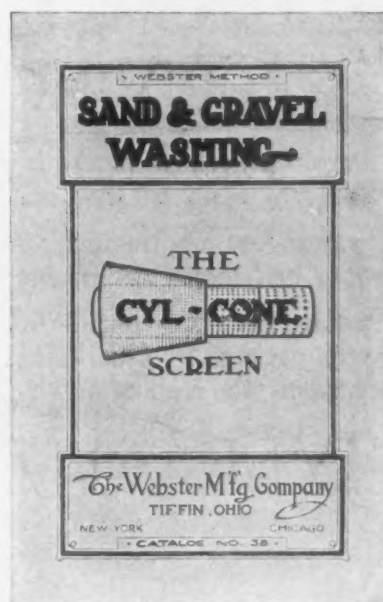
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Contractors, cement products manufacturers and others who use cement direct from car to mixer may easily cut their costs by ordering their cement shipped in bulk instead of in sacks.

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Portland cement is one of the cheapest manufactured products and does not warrant a costly package. Our leaflet, "Bulk Shipments of Portland Cement," presents some arguments, the reading of which may save you much money. Send for it.

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"CHICAGO AA" BOOTH.

Below is illustrated the exhibit of the Chicago Portland Cement Co., Chicago, installed at the Sixth Annual Chicago Cement Show. It was designed and built by the Peoria Trusswall Mfg. Co. of Peoria, Ill., "Chicago AA" Portland cement being exclusively used, and besides consists of table, lawn-seat, sun-dial, flower-urn, pedestal and lighting standards in concrete.

The system of construction followed, known as the "Trusswall" system, is unique, in that the concrete is not poured, but is turned, the lathe and metal templates superseding the form or mold heretofore used in work of this character.

A collapsible core is used in the work of construction. This core is first placed in the lathe, fully protected with paper to prevent the concrete adhering to it. An even coat of concrete is then applied and allowed to partially set.

The reinforcing is next placed. This consists of wire, or wire and rods, of a suitable gauge, thickness and quantity to carry the desired load. The wire is wound from end to end of the shaft, at an

angle of about forty-five degrees, by revolving the shaft, thus forming a diamond mesh which covers the entire column.

When additional reinforcement is necessary, rods are placed lengthwise, from end to end of the shaft, and these are again covered with a second layer of wire in the manner already described.

The final coat of concrete is then applied, turned and permitted to set, after which the core is withdrawn from the finished column.

Under this system, which has gained wide recognition among architects, a column may be produced in concrete of any size, to any detail, thoroughly waterproof, not unduly heavy as it is hollow, symmetrically correct and without mark or blemish.

The same method of construction is followed in building the table, lawn-seat, sun-dial, flower-urn, pedestal and lighting standards, all of which are reproduced in these pages. Worthy of special mention is the table and the lighting standards. The former is produced in five colors and illustrates to good advantage the possibilities of inlaid work, while the latter may be readily equipped with three or five light clusters.

CHICAGO BELTING COMPANY'S BOOTH.

The editorial viewpoint is supposedly unbiased. We gazed with an observing eye over the exhibits, and while some had more interest than others, of course, very often the machinery or material exhibited lends itself easily to attractive and interest compelling arrangement. You would say without hesitation that it would be pretty hard work to make a leather belting exhibit of interest to the average show-goer. This, however, is exactly what the Chicago Belting Company did. Their booth, No. 129, was fronted by brass railings around which braided leather rope is artistically wound, while at intervals leather tassels relieve the straight lines of the brass tubings. At the back of the booth stands a glass cabinet seven feet high enclosed rolls of the various brands of belting made by that company. At one side of the booth a 2 3/4 inch White Strip belt ran under Griffin mill conditions, while across on the other side stood a section of leather belting 72 inches wide, and 3 plies in thickness. An interesting fact about this is that to make one hundred feet of 72-inch 3-ply Reliance belting, about 250 steers give up their lives, for only the center of the back is used, a piece 30 inches wide and 46 inches long. In front of this mammoth belt two glass cases display samples of everything produced by the Chicago Belting Company. Besides leather belting, about 80 manufactured articles were exhibited, all produced by this company. An evidence of the progressiveness of the Chicago Belting Company is the establishment of two new branches within the past year, at Los Angeles and Cleveland, and

STRUCTURAL TILE.

A call by a representative of Rock Products at booth 99, which is occupied by the Chicago Structural Tile Company, developed into a most entertaining and instructive visit. This paper is always on the lookout for progressive ideas, and is ever seeking for an opportunity to be shown something new. The constant sound of a human voice in the booth next to us caused the representative to pay a little attention to the young man from whom the sound came. What little was heard led to a determination to make a call on him. The representative was greeted very cordially by Mr. Kensel, who is in charge of the booth, and who seemed most happy to impart a knowledge of

the building of a tannery at Niles, Mich. Another evidence of progress is the broad advertising policy of this company. Every reader of **Rock Products** has seen their ad on the front cover each month, and it has been there regularly for years.

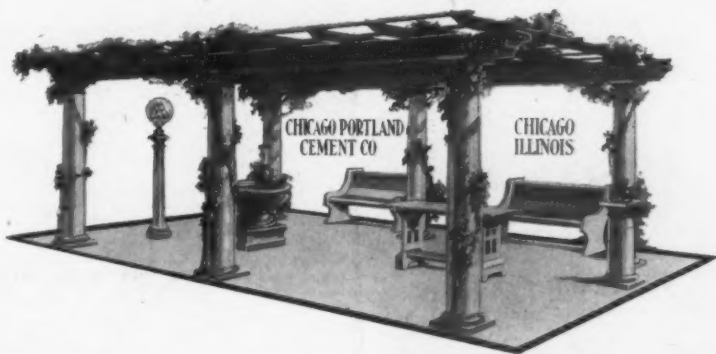
At the end of about four or five minutes when the initial set has taken place, there is a slight shrinkage in the tile. Now is the time to get it out of the mold so it will be intact. This is done by turning the lever, and the tile is brought out of the mold to the top of the machine where it is hot and steaming. During the process of cooking the sulphuric acid is passed off in evaporation, the elimination determined by the use of litmus paper. The partially set tile is now removed to a small car to be transferred to the steaming oven where it will be placed and kept hot and wet so as to retard the final set. If the tile were closely examined at this point with a microscope, the molecules would be found to be more or less disturbed. Before the tile can have any tensile strength whatever, it is necessary that these molecules should come to a state of rest, and then they must be charged with carbonic acid gas while the molecules are in a state of rest; and when crystallization takes place, the tile then gets its compression resisting quality.

In order to retard the final set, the tiles are placed on a car and run into the steaming oven where they are kept wet and hot. At the end of about 24 hours the carbonic acid gas is generated and the tiles become tough and strong until they are capable of receiving a most tremendous pressure. After a short time they are placed upon the lot to await shipments. This is known as a wet process, and is the only one where a dense water-tight material is obtained, and is due to gravity instead of tamping, which is incorrectly believed to exclude the possibility of penetration by water.

Mr. Kensel had on exhibition a tile upon which he had inverted a pint bottle full of water. At the time the representative visited him the bottle had been constantly on the tile for 48 hours and had not emptied its contents, showing the slowness with which the tile absorbed the water. A light was placed inside of the hollow tile, and it was seen that the water had not gone through to the inside. Mr. Kensel also placed one drop of water on five pieces of tile at random, and that drop was not absorbed inside of ten minutes.

At two minutes to eight Mr. Kensel, of the Chicago Structural Tile Co., dropped into booth 88 with the information that the contents of the pint bottle of water, which was inverted on a piece of concrete hollow tile, had finally been absorbed by the tile, making a total length of time for the absorption 56 hours 23 minutes.

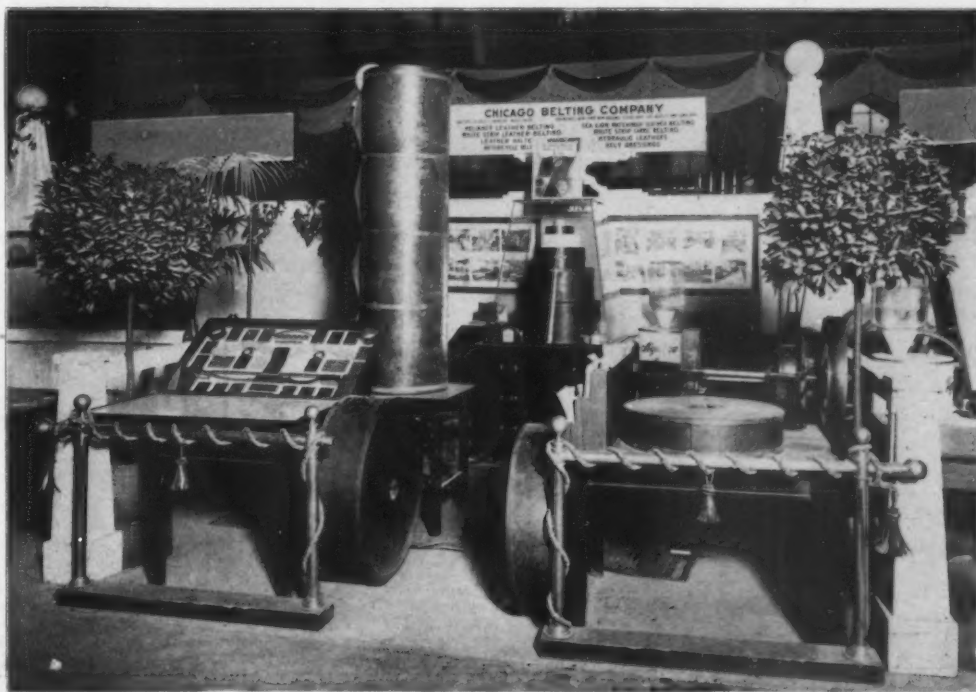
Mr. Kensel commented on the cheapness in cost of his material, and his demonstration of its fire-proof and waterproof qualities, together with the



what he considers a most wonderful product.

This paper is not unfamiliar with the product which Mr. Kensel describes, and we know that the statements made by him are beyond all doubt, and he appears to be very careful that he makes no statement except what is based on facts. He would not allow himself to be asked any questions until after he had given a brief description of his material and the many possibilities it possesses, then he is eager for questions.

This material is made out of concrete, of a mixture of 1 part cement, 2 parts sand and 2 1/2 parts of limestone screenings, to which 30 per cent of water is added. This amount of water makes a most liquid mixture and precludes all possibility of tamping or in any way pressing the tile into its shape. Therefore, no cement can be squeezed out and its full strength remains in the mixture. This mixture leaves the mixer and passes downward into steel troughs where it is kept constantly



BOOTH OF CHICAGO BELTING CO., CHICAGO, ILL., AT SIXTH CHICAGO CEMENT SHOW.

low cost, should be enough to cause the high grade engineers, contractors and architects to give it the most serious attention.

There is no question as to the high qualities of this product, for it is based upon the latest facts that science has obtained for the concrete industry. It combines the three requisites, namely fireproofness, waterproofness, cheapness, and a glance at the bungalow in the Annex ought to convince one of the first two, and Mr. Kensel can convince one of the last one as well as the other two.

The bungalow is built of this hollow tile, and we are informed at booth 99 that not one piece of tile is tamped. Mr. Kensel has little or no confidence in a tamped concrete as a material for house walls, on account of its porosity, and his statements are all well founded on facts, and we look for a big future with a product made of concrete raised to the boiling point and requiring no tamping to make it waterproof, such as this concrete hollow tile.

The McCormick Waterproof Portland Cement Company, manufacturers of the Shamrock Brand Waterproof Compound, is seeking sales agents in all unoccupied territories to handle its waterproofing. Mr. H. C. Morrison, manager and waterproof engineer for the company, has collected valuable data from the different works in which McCormick (Shamrock Brand) Waterproof Compound was used in all parts of the United States and Canada. Mr. Morrison can show where the company has waterproofed, through their sales agents, close on to 2,000,000 barrels of Portland cement from January 1, 1912, to January 1, 1913. This work includes cement waterproofed by the McCormick Process in subways, tunnels beneath rivers, foundations, roofs, stucco for residences, bridges, reservoirs, dams, etc. Mr. Morrison points with much pride to his late success of waterproofing the La Salle street tunnel under the Chicago river. The company will take great pleasure in furnishing full information to interested parties.—Advertisement.

PLEASED WITH SHOWING MADE.

G. H. Dougherty is certainly a hustler for business, if the large number of orders on his books at the present time is any criterion. When seen by a representative of this paper at booth 93, where the exhibit of the D. & A. Post Mold Co. is located, he said that their 6-mold size fence post machine complete was creating considerable attention, and they were receiving many favors and orders. They also have a special size line of anchor molds. He said they had taken more orders direct at the present show than at any other.

MEETING OF SOUTHERN ENGINEERING ASSOCIATION.

The picture on this page was made at Nashville, Tenn., of the members attending the Engineering Association of the South, December 6th and 7th. The membership comes from all the southern states and comprises concrete engineers, electrical engineers, mechanical engineers, sanitary engineers, etc. While not all of the several hundred members were present, a representative number came. H. M. Gould, of Foster, Creighton & Gould Company, Nashville, was elected president for the coming year. Arthur Pew, of Atlanta, Ga., is the retiring president. The association is in the twenty-fourth year of its existence. A programme consisting of addresses on technical subjects and business discussions, together with several social features, took up the time of the session. The meetings of the committees were held at the Carnegie library. J. C. Evans, of Nashville, was re-elected secretary of the body. An auto tour of the city and a banquet at Hotel Tulane were features.

The view taken is appropriately at the scene of a

piece of engineering work, now in progress—the bridge of the Lewisburg & Northern Railroad, over the Cumberland river at Nashville. Further reference to this structure as it progresses will be made in these columns. The bridge is 3,000 feet long, 130 feet high and will require about 3,500 tons of steel. There will be a viaduct approach at each end with a channel span of 300 feet and adjacent spans, three 200 feet and three 125 feet, requiring about 20,000 yards of concrete, with eight piers and a number of pedestals for viaduct and two abutments. The five largest piers will require each about 2,500 yards of concrete. Kosmos Cement, 1-3-6 mix, is being used. The substructure work will be completed by the first of the year, nearly a year ahead of time. Foster, Creighton & Gould Company is building this bridge.

MUNICIPAL CONTRACTORS' MEETING.

The Sixth Annual Meeting of the Illinois Association of Municipal Contractors opened at the Hotel LaSalle Thursday afternoon, January 16th. After the regular order of business, a number of the members addressed the association on subjects of particular importance. Among the speakers were: A. H. Baer, of Belleville, who spoke on "The Construction of Hard Roads by Special Assessment," and C. W. Terry, of Edwardsville, who spoke on "Hard Roads, When & How." Addresses



H. M. GOULD, PRES. SOUTHERN ENGINEERING ASSOCIATION, NASHVILLE, TENN.

by A. E. Rutledge, S. A. Tuttle, W. W. Kerch and R. E. Townsend were also on the program.

At 7 p. m. the banquet was held in the East Room of the hotel. The association held its final meeting Friday, at which time the election of officers took place. The present officers are: President, A. E. Rutledge; vice-presidents, S. A. Tuttle, John Keeley, and J. A. Meyers; secretary and treasurer, I. D. Fain; executive secretary, C. E. Mateer.

The Illinois Association of Municipal Contractors held their closing meeting at the Hotel La Salle, Friday, January 17. The discussion on "Good Roads" was continued and the contractors present decided to await an expected good road bill to be put up before the legislature, and then to support it with a

will. The officers for the ensuing year were elected as follows: President, S. A. Tuttle, Decatur; first vice-president, John McCauley, Galesburg; second vice-president, J. A. Meyers, East St. Louis; third vice-president, T. W. Keyes, La Salle; fourth vice-president, A. W. Eisenmeyer, Granite City; secretary and treasurer, Joseph A. Gund; executive secretary, C. E. Mateer. Mr. Schilling, president of the Board of Local Improvements, made an interesting talk on "special assessments" in the course of the meetings. It was decided to hold the next meeting at the Hotel La Salle, January, 1914.

THE IMPROVEMENT OF ROADS BY SPECIAL ASSESSMENT.

A. H. Baer, Belleville, Ill.

"Every age has its problems, by solving which humanity is helped forward." So said Helne. That was almost a century ago, when the individual and public mind operated upon a single-track scale. That was a time when social, economic, religious and political problems followed one another successively with even and regular order. But we are living in a day when ideas are crowding for supremacy, and each man of talent and ingenuity is evolving a plan for the uplifting of man and society, and the improvement of social and economic conditions, which he gives currency with unreserved assurances that it affords the panacea for all social and economic ills and indicates the sovereign path to Arcadian bliss.

In this enlightened day and age, when education is the common attribute of a nation, each of the infinite variety of movements, policies and creeds, boldly asserted and plausibly maintained, finds its supporters, its adherents, its advocates without number.

Happily, among the movements of the present day, is that of road improvement. The policy as one of governmental and political necessity and expediency is in no sense new.

Science and history are sequential, as is the progress of the nations. One epoch is but the cumulative total of the past, each generation building upon the knowledge of that which preceded it, endeavoring to add to it rather than to supersede it. We look to the roads of the older countries to study their methods of construction, their manner of building, their natural resources, and their financial resources. We are attracted by the roads leading into Rome, which are of rock construction, in many places, three feet deep. We read of the thousands of captive soldiers who were employed in the colossal and laudable work of road construction under the ruthless lash of conquering emperors. We are taken over the scenic roads of the German Empire, the Republic of France and Imperial England, and we look enviously upon the roads improved by monarchs who had at their arbitrary command, teeming millions of poverty stricken men and boundless powers of taxation, for the betterment of the roads which they claimed as their individual property.

As a policy, road construction in this country does not present a disputed problem. Whether our roads should be improved or not is not a matter of controversy. There exists no conflict of opinion in this regard. The most consummate hangers-on to the coat tail of progress cannot even be heard to whisper an opposition on this subject. It is platitude to mention the arguments in favor of the policy. But in view of our limited financial resources, that is, the limitation upon our powers of general taxation, the great, if not the only problem, seriously standing between an almost unanimous demand for good roads and a realization of this demand, is to find the method of raising sufficient funds to make the movement assuredly and speedily effective.

The awakening of a public appreciation of the potency of good roads is now making that issue a paramount one in this country. The project has only recently matured, and it is today the subject of first importance in the public mind. Not until recently has the public been moved by an adequate appreciation of the economic, social, educational, political and material losses suffered by the people in general through the lethargy and indifference which has left our roads unimproved and practically uncared for, since they were originally laid out.

Happily, selfish interests are now behind the movement to improve the highways of this country. Selfish interests have organized. They have promoted. They have expounded. They are disseminating information and cultivating sentiment. They are educating the people, they are enlisting the support of the people in general.

It has been ably said by Martineau, "All the grand agencies which the progress of mankind evolves are the aggregate result of countless wills, each of which, thinking merely of its own end, and perhaps fully gaining it, is at the same time enlisted by Providence in the secret service of the world."

And yet, while this policy may owe much of its impetus to self-serving and self-seeking organizations and individuals, it has grown to be country-wide, and the interests of those who originally espoused the cause are

(Continued on page 45.)



SOUTHERN ENGINEERING ASSOCIATION IN CONVENTION, DECEMBER 6 AND 7, NASHVILLE, TENN.



NATIONAL BUILDERS' SUPPLY ASSOCIATION. MEETS ANNUALLY.

OFFICERS.

Charles Warner, Charles Warner Company, Wilmington, Del., President.

Ralph Dinsmore, Wilmington, Del., Secretary.

Henry W. Classen, Maryland Lime & Cement Company, Baltimore, Md., Treasurer.

EXECUTIVE COMMITTEE.

Charles Warner, Chairman.

Walter F. Jahneke, Vice-Chairman.

ONE YEAR.

Edward S. Walton, Youngstown Ice Company, Youngstown, O.

C. N. Ray, C. H. Little Company, Detroit, Mich.

Charles M. Kelly, James C. Goff Company, Providence, R. I.

L. W. Macatee, W. L. Macatee & Sons, Houston, Texas.

TWO YEARS.

Richard Kind, Toledo Builders' Supply Company, Toledo, O.

R. C. Brown, The Cook & Brown Lime Company, Oshkosh, Wis.

Walter F. Jahneke, Jahneke Navigation Company, New Orleans, La.

James G. Lincoln, Waldo Brothers, Boston, Mass.

COMING MEETING OF N. B. S. A.

Just as we go to press the annual meeting of the National Builders' Supply Association at New Orleans, January 30 and 31, is coming together. From all parts of the country the dealers and the manufacturers are packing their grips and have their reservations made at the Grunewald and other hotels. It is to be a great meeting, a getting-together for co-operation in the business year of 1913. The local committee of supply dealers in New Orleans has made every arrangement for the comfort and entertainment of the visitors, and each and every one of you can be sure of a hearty Southern welcome—and that means something more than just a formal presentation of the "Classic Key to the Citadel" which is so often proffered but not given.

Outside of the goodfellowship feature which always prevails at meetings of the National Builders' Supply Association, it is hoped that a new hold on association life will be taken, and that the interest in the real purposes of co-operation between manufacturer and dealer will be built up, so that the conditions of the present year will mean a profit for every man who has his money invested and who gives his time, attention and efforts to the intelligent and careful supplying of the materials of construction, contractors great and small throughout this land for the coming year.

The building records of 1912 show us that that business is steadily growing; that more materials are being consumed each year, and that in all probability this year, 1913, will see more cement, more sand, more plaster, more brick, and more of the special necessities of building materials than have ever been used in the past.

It is but meet and proper for ROCK PRODUCTS to say at this time that never before in the world's history has the builder, the practical man who uses the mason's trowel, the plasterer's hock, or the concrete mixer, ever had such well manufactured, such uniformly regulated, such dependable materials to work with as at the present time.

There is no manufacturer who is serving the building trade today who is not striving to produce the best possible materials for the money that he collects from the trade, and this means nothing more or less than that the buildings we are constructing today are the best that the world has ever known, and that there is but one criticism of the building trades that can justly be made at this time, viz., that for the sake of cheapness there is not enough of the manufactured products of rock used as might well be used to improve the buildings that we are putting up.

Because our cement is so much better than anything known in the past is not a good reason for reducing the thickness of bearing walls; because our hard plasters and hydrated limes will give us quicker possible results than were ever obtainable before is no reason why specifications should be

cut down to a single coat where established practice has taught us that even three or four coats may well be used to get the highest possible results. The materials of construction as they have been improved in quality have been steadily decreasing in price. Standard materials, such as cement, lime, brick and plaster are cheaper with better products than they were when the products were of indifferent quality and manufactured in much smaller quantities.

It is the tendency of the great mills of today to turn out a higher grade product than was ever made by the little operator of a few decades ago. The dealer has been in the past year better recognized than he was formerly, for the reason that the business which the manufacturer does with the trade through the medium of the dealer is the most satisfactory, and at the same time the most profitable business that his books carry. The personal contact between the dealer and the local contractor is just about as important a feature as can be measured in the business world, and that is especially true in the matter of building material; for the conditions which surround each and every building operation are attached to and a part of that operation itself, and it is impossible for the man who is far, far away to know just what the conditions are which surround each and every operation where his goods are being used, and for this purpose he can only see the dealer who is in touch alike with the manufacturer and the contractor. The dealer is the only man who can furnish information in regard to deliveries of heavy materials and other particulars, which are no small factors in the building material business.

* * * * *

A careful study of the program will show that the meeting will be well worth the time and expense involved in attending. The officers have endeavored to select subjects that will be of interest to all members and it is hoped that every member will come to the meeting fully prepared to ask questions and freely discuss the various subjects under consideration.

The board of directors will meet Thursday morning, January 30th, at 10:00 a. m., at the Grunewald hotel, and the general business sessions will begin promptly at 2:00 p. m. The officers will consider it a courtesy if you will arrive at the convention room promptly at the hour mentioned. This is especially desirable so as to allow full time for your personal business, visiting the many interesting points around New Orleans and witnessing the special features attending the Mardi Gras.

If you have not already done so, it is quite necessary that you make your hotel reservations at the earliest possible moment. If you have not been in New Orleans during the Mardi Gras, you cannot appreciate the tremendous rush for accommodations at that time. Write to Mr. Walter F. Jahneke, 814 Howard Avenue, New Orleans, telling him exactly what you will require and for how long a time, or, if you write to the hotel direct, send Mr. Jahneke a copy of your letter. He has promised to see that all members are properly taken care of.

Also, if you contemplate going to Panama, you should make arrangements for passage as quickly as possible, as there will be, no doubt, a great rush to Panama immediately following the Mardi Gras. Steamers leave New Orleans February 1st and 5th (United Fruit Line). It takes about two weeks to make the round trip from New Orleans and the cost is from \$95.00 to \$150.00, according to location of staterooms. There is also a steamer returning to New York. A number of the members are going to take this trip and if you are interested write to Ralph Dinsmore, secretary, 278 Du Pont building, Wilmington, Del., for further information.

The program of the fourteenth annual convention appears below:

Thursday, January 30.

Meeting of executive committee, 10 a. m.

Business session open to all members, 2 p. m.

Address of welcome, by an official of the city of New Orleans.

If opportunity permits one or two of the papers arranged for the business sessions will be presented on Thursday following the routine business.

Friday, January 31, 10:00 a. m.

1. Convention will receive report of nominating committees.

2. Election of officers for ensuing year.

3. Presentation of remaining papers and discussion of same. Every member should come to the convention fully prepared to ask questions and enter into a discussion regarding the various papers, as only in this way can the most good be gotten from them.

The necessity for an afternoon session will be determined by conditions developing in the morn-

ing session and will be announced before the close of the morning session.

List of some of the papers to be presented during business sessions on Thursday and Friday. Other interesting and important papers will be added to this list later on, full details of which will be announced later:

"Business Efficiency," by Mr. A. B. Francisco, state manager, the Sheldon School, Dallas, Texas.

"Waterproofing Concrete." (Illustrated)—Dr. Maximilian Toch, College of the City of New York, N. Y.

"Profit Sharing." By Charles Warner, Charles Warner Company, Wilmington, Del.

"Sand and Gravel Apparatus." (Illustrated)—Mr. Raymond W. Dull, Aurora, Ill.

"Why the Building Supply Dealer Is Vitaly Interested in the Best Concrete Floors Obtainable." (Illustrated)—Mr. N. E. Newman, president, the Master Builders Company, Cleveland, Ohio.

"The New Competition." By Anonymous.

NEW ENGLAND DEALERS.

The second annual convention of the New England Builders' Supply Association will be held in Boston at the New American House on February 20th, 1913. The meeting will be called to order at one o'clock sharp and adjourned at 5:30. The banquet will be at 6 o'clock, with a theater party at 8 o'clock.

The New England Builders' Supply Association, which made its debut only two years ago, is flourishing in every way and the members are enthusiastic over the progress that has been made. Secretary R. H. Whitney has been untiring in his efforts to advance the scope of the association. It is seldom that the men in any trade have taken hold of the association idea with as much enthusiasm as has been displayed in New England.

Reports from many of the dealers show a satisfactory amount of business and they are all gratified at the work done so far.

The New England dealers, in general, have had a very successful year. A great many contracts have been awarded to New England firms and the New England dealers have been fortunate in keeping a great deal of this business inside of their territory. The money market has been easy and few failures have been noted either among the dealers or the contractors.

There is one matter which is arousing the interest of the New England trade at the present time and that is the question of using hydrated lime. A representative of one of the largest manufacturers of hydrated lime in the Eastern states advises that the shipments of that material into the New England states has increased nearly twelve hundred per cent in the last two years, so that it is evident that New England dealers are waking up.

The New England Builders' Supply Association is fast outgrowing its childhood days. Every week sees additions to its membership. The dealers realize the benefits which are to be derived from co-operation in their chosen work and are not backward in enrolling their names for this cause. The annual meeting of the association, to be held in Boston next month, will be of vital interest to its members, and all look forward to having a large attendance and many interesting discussions.

O. B. S. A. TO MEET FEB. 13 AND 14.

At an executive committee meeting held at Columbus, Ohio, Friday, Dec. 13, it was decided to hold the Eighth Annual Convention of the Ohio Builders' Supply Association at the Southern Hotel, Columbus, Thursday and Friday, Feb. 13 and 14.

The Ohio Builders' Supply Association is in a better condition now than it has ever been. Since January 1 of this year it has added 30 new members. The amount of money in the treasury is now larger than at any previous time.

The officers of the association have been untiring in their efforts to secure a great attendance at the forthcoming meeting and have received many reports which indicate that the representation will be large. The good work which has been done by the Ohio organization has met with reward in respect of the increased membership and the awakening of the interest of those in the trade, and it is evident that an expansion of its effectiveness in furthering the interests of the dealers of builders' supplies in the territory in which it operates will thereby result. Let all put forth their best efforts to be on hand and take an active part in the discussions, and profit by hearing the opinions and the telling of methods used by those in the same line, tending to increase the efficiency of the present standard of doing business.

The plant of the M. B. Goetschius Company, at Ottawa, Ill., was damaged by fire the latter part of December, but repairs have about been completed.

CONTRACTORS' ASSOCIATION FORMED.

Louisville, Ky., Jan. 17.—The report of City Building Inspector Robert J. Tilford demonstrates conclusively that 1912 had the bulge on its predecessor in volume of building operations. Building operations for 1912 amounted to \$6,522,730, a gain of \$423,089 over the figures for 1911. The number of permits, decreased, 2,379 being issued during the past year, against 2,495 in 1911. The banner month of 1912 was July, when permits for structures worth \$1,075,910 were taken out.

Repair work is proving the January feature with the Sam F. Troxell Company. The company has four crews out and all are finding sufficient work to keep them occupied. The Troxell company has completed the eastern driveway on the new Kentucky & Indiana Terminal Railroad Company's new bridge, the western approach being held over until spring. The work will not be completed until the old bridge has been raised early in the spring. The Troxell company will within the next sixty days get to work on the new building of the Louisville Traction Company, having secured the roofing contracts for the work. The roofs will be of built-up asbestos over concrete.

Owen Tyler, one of the leading supply men of Louisville, has announced the acquisition of a new material, the agency for Kentucky from the Von Dorn Iron Works, of Cleveland. The company manufactures metal lockers and fixtures of all descriptions and Mr. Tyler will push the agency vigorously.

The annual convention of the Kentucky Retail Lumber Dealers' Association, announced for February 19 and 20, is attracting much attention from the building supply trade. The majority of the lumber dealers in Kentucky also carry building supplies of numerous descriptions. The Lumber Dealers' Association will have a dinner and other little social affairs, and the Louisville supply men are arranging for similar parties on the side. The Seelbach Hotel is to be the scene of the meeting. George S. Chowning, of Shelbyville, a lumber dealer and supply man, is president of the association.

The Grayson County Supply Company, of Litchfield, Ky., is erecting a warehouse which will be used for storage purposes when completed. The company has had a prosperous year and is preparing for a big extension of business in that ahead.

Brockamp & Cavanaugh, a well-known supply firm of Cincinnati, O., began the new year as a corporation, having filed articles with a capitalization of \$10,000. The firm has been in business for several years, and the new style of the concern is the Brockamp & Cavanaugh Company. Mr. Brockamp will be president, and his former partner secretary-treasurer, it is understood.

The election of J. W. Patrick to succeed A. J. Dyer as second vice president was the only change when the Builders' Exchange, of Nashville, Tenn., held its annual election recently. R. T. Creighton was re-elected president, other officers being E. T. Lewis, first vice-president; J. W. Patrick, second vice-president; Albert W. Hutchison, treasurer, and E. Y. Fitzhugh, sergeant-at-arms. The selection of directors brought about a warm struggle, the Exchange being divided into two camps, the "Reds" and "Blues."

The Bates Roofing Company is the style of a new corporation which recently began business in Louisville. R. L. Bates is at the head of the concern, which has occupied offices at 223 South Fifth street. The company handles asphalt and pitch gravel roofs, besides doing repair work of all kinds.

The Building Contractors' Association of Cincinnati was formed at a recent meeting of contractors of the Queen City. William Harig was selected as president of the new organization, other officers being elected as follows: William Miller, first vice-president; A. W. Williamson, second vice-president; C. W. Ireland, third vice-president; Tyler Fields, fourth vice-president; Simon Bruner, treasurer, and Charles F. Waltz, secretary. More than 100 contractors are charter members of the organization.

NASHVILLE RETAILERS.

Nashville, Tenn., Jan. 18.—Robt. Herbert, of T. L. Herbert & Sons, has returned from Bay View, Mich., Chicago and eastern cities. T. L. Herbert & Sons handle all kinds of building material, such as lime, cement, sand, brick, etc.

J. S. Minton & Co., 117 Fifth avenue North, Nashville, are doing a number of stucco jobs around town.

Poster, Creighton & Gould have been placing several hundred tons of steel beams beneath the viaducts at Fourth, Fifth, Sixth and Seventh avenues.

The Nashville Masons, who recently sold their

property on Church street for the consideration of \$100,000, are casting about for a new location, probably on Sixth avenue, where they will erect their new building.

E. N. Eshman, president of Radnor College, Nashville, is improving the Radnor park addition near the college, by the erection of twenty-six bungalow residences and the expenditure of some \$60,000 in landscape, sidewalk and special work.

GREAT ACTIVITY IN BUILDING.

Phenomenal increases were made in building operations throughout the country in the last month of the year. Permits were taken out in December in seventy-nine cities according to official reports for the construction of 13,827 buildings involving a total cost of \$53,385,746 against 14,715 permits for buildings aggregating in cost, \$47,196,858, an increase of 888 buildings and \$6,188,888 or 13 per cent. It is believed that the increase is due in a great measure to the open weather this winter. Winter began early last year and the extreme cold along with the heavy snow fall, put a stop to building early. The list of cities with the number of permits and amount involved is as follows:

Cities—	1912	1911	%		
New York (Bronx Man. and Bronx)	No. of Bldgs.	Estimated Cost	No. of Bldgs.	Estimated Cost	% Gain Loss
Boston	366	\$16,159,022	178	\$ 8,499,830	91
Chicago	387	6,830,000	338	3,514,000	87
Minneapolis	574	4,927,900	2,755	6,805,300	29
Philadelphia	281	9,803,330	180	4,000,000	56
Cleveland	669	3,558,890	526	1,737,840	47
Los Angeles	494	3,517,430	412	2,330,800	8
Salt Lake City	1,396	2,270,680	937	1,431,535	59
St. Louis	44	2,110,425	28	35,600,525	31
Detroit	470	1,608,872	389	685,405	158
Newark, N. J.	468	1,506,000	363	1,063,700	39
Kansas City	186	1,109,285	189	814,124	44
San Francisco	421	1,088,138	408	1,307,489	10
San Diego	410	970,830	331	432,620	128
Seattle, Wash.	888	968,350	655	326,890	196
Atlanta	227	918,490	190	324,678	183
Portland, Ore.	390	876,060	313	486,806	101
Oakland	268	874,902	242	1,308,248	40
Jacksonville	268	667,794	232	517,539	39
Milwaukee	114	647,120	107	358,750	160
Rochester, N. Y.	166	610,578	195	762,635	22
Baltimore, Md.	178	549,620	302	696,905	31
Indianapolis	241	541,805	266	709,810	38
Pittsburgh	205	537,105	222	759,419	31
Tampa, Fla.	210	514,800	116	867,419	41
Washington, D. C.	481	481,547	342	145,842	239
Memphis	261	474,923	360	911,999	48
Cincinnati	287	374,156	207	316,000	19
Sacramento	153	359,000	298	1,394,000	78
Cedar Rapids	252	352,390	663	694,250	69
Richmond, Va.	91	350,315	39	988,691	180
St. Paul, Minn.	23	334,000	17	238,000	40
Houston, Texas	60	328,998	68	359,130	9
Duluth	145	312,960	121	419,330	26
Denver	204	288,493	86	161,727	78
Akron	37	284,384	49	9,010	193
Springfield, Mass.	131	272,700	119	370,150	26
Toledo	114	268,485	102	176,770	45
Fort Wayne, Ind.	73	245,215	74	299,960	8
New Haven, Conn.	104	220,123	82	141,757	69
Hartford, Conn.	41	226,250	30	57,350	478
Worcester	80	227,120	78	27,325	12
Louisville, Ky.	58	226,450	59	296,120	8
Tacoma	90	225,587	104	298,817	38
Albany, N. Y.	116	123,000	118	213,490	60
Birmingham	107	110,814	112	88,565	126
Omaha, Neb.	161	204,790	167	208,305	8
Columbus, Ohio	168	179,194	188	102,377	68
Nashville, Tenn.	66	168,650	76	164,000	2
Scranton, Pa.	139	167,478	78	129,637	31
Berkeley, Cal.	19	148,080	20	128,052	84
Grand Rapids	47	144,675	54	237,675	26
Stockton, Cal.	63	144,450	48	98,800	46
New Orleans, La.	93	138,450	63	117,592	6
Portland, Me.	31	134,800	22	109,772	11
Pasadena	128,111	128,111	128,111	128,111	87
Dayton	17	108,960	18	61,300	59
Davenport	121	108,214	119	106,011	45
Peoria	28	108,790	31	108,260	8
Spokane	20	108,000	15	94,650	330
Harrisburg	25	102,800	25	66,400	56
Norfolk, Va.	45	102,860	70	74,980	37
Evansville, Ind.	19	99,450	16	91,825	212
Springfield, Ill.	45	89,731	26	92,157	4
Des Moines	54	88,805	63	76,136	16
Sioux City	25	77,025	24	48,975	75
Pateron, N. J.	37	75,437	105	237,275	107
St. Joseph	28	73,850	28	117,300	26
Wilkes-Barre	39	69,427	56	158,718	46
Charlotte, N. C.	45	65,591	14	15,240	332
Topeka	33	65,004	43	81,698	12
San Jose	31	58,040	28	50,028	70
Terre Haute	39	47,800	9	7,700	530
Chattanooga	42	44,660	46	35,366	36
Wilmington	22	40,284	19	17,965	124
Wichita	134	37,505	144	135,960	9
Colorado Springs	19	31,550	20	28,860	9
Pueblo, Colo.	15	30,425	22	47,100	32
	14	29,860	21	27,452	30
	20	22,515	16	17,580	36
	13,827	\$53,385,746	14,715	\$47,196,858	

It will be seen that there were gains in 49 and losses in 30 cities. The total for New York City is far ahead of any preceding period for some months, permits having been taken out for the construction of 366 buildings, at a total cost of \$16,159,022 as against 178 buildings involving \$8,499,830 for the corresponding month a year ago, an increase of 186 buildings and \$7,659,202 or 91 per cent in cost. It is worth while to select the cities in which there were significant increases. They include Boston, 87 per cent; Philadelphia, 47; Detroit, 39; Minneapolis, 640; St. Louis, 153; Salt Lake City, 5,828; San Diego, 123; Seattle, 196; Atlanta, 182; Kansas City, 101; Memphis, 19; Jacksonville, Fla., 150; Tampa, 230; Houston, 78; Duluth, 193; Akron, 45; Toledo, 62; Fort Wayne, 473; Tacoma, 138; Birmingham, 68; Nashville, 344; Davenport, 320; Cedar Rapids, 40; Harrisburg, 212; Springfield, Ill., 75; St. Joseph, 332; Topeka, 520; Terre Haute, 124. There is not a section of the country, it will be seen, in which a heavy increase is not shown. In Chicago there was a decrease of

29 per cent and in the other cities in which there were decreases building has heretofore been exceedingly active and a let-up was to have been expected.

Conditions throughout the country indicate a continuously active building period for some time to come.

NEW BUILDINGS FOR MEMPHIS.

Memphis, Tenn., Jan. 18.—The retailers and contractors have been busy of late in Memphis and the look ahead is good. The contract for the new home of the Mississippi Valley Bank and Trust Company has been awarded. It will be located on a part of the site of the old Masonic Temple.

Architects Jones and Furbringer some time ago completed plans of the Marx and Bensdorf building, another bank structure to be erected at 152 Madison avenue. Reinforced concrete construction will be used, with glazed terra cotta for the exterior.

The Cumberland Telephone Company contemplates starting five stories of a ten-story building it will erect on Court avenue, between Third and Fourth streets. Underground conduits will be laid on more than six and one-half miles of street. George Yundt is chief engineer of the company.

Hoggson Bros., of 7 East 44th street, New York, has completed the contract here of the Mercantile Bank on Madison street. This structure, while only two stories and a basement, is of the most handsome construction, much marble, tile, stone and plate glass figuring in the job.

The Pittsburgh Plate Glass Company has opened a large branch here to look after this territory.

Contract for the new home of J. H. Stewart has been awarded by Architect John Gaisford to R. A. Harris & Son. It will be located on the northwest corner of Parkway and Adams and the contract price will be \$16,800. The building will be of brick and tile construction and fireproof.

Cement is bringing in Memphis about \$1.75 net per barrel. Lime has advanced five cents. The winter season has not caused business to drop off as much as was expected.

Edwin Frazer, formerly with the Cubbins Lime & Cement Company, which concern was acquired by the Fischer Lime & Cement Company, is with the latter firm running their warehouse No. 3.

The Wright Lime & Cement Company are busy in the eastern section of the city. Steve Wright is one of the pioneers here and has his established line of business in builders' supplies.

NEW YORK MATERIAL MEN.

New York, N. Y., Jan. 18.—W. H. Schmohl, of the Murtha-Schmohl Company, stated that the demand for building materials is quiet at the present which is but natural condition at this season of the year. "Money is tight, loans are difficult to negotiate, and collections are slow," he said. "We have done about \$1,500,000 worth of business at our three yards during the past year. This is about the usual amount of business transacted during the past few years."

E. B. Morse, of the Frank E. Morse Company, stated: "Business is slackening up gradually and the mild weather experienced this winter has caused building operations to continue later this season than for some time past. The Hudson river is still open and we have received cargoes of plaster from the Higginson Plaster Mills at Newburgh, N. Y., as late at January 3. Prices are strong and unchanged."

Samuel Wells, eastern manager of the McCormick Waterproof Portland Cement Company, stated: "Our waterproofing cement was used in the first foundation to be built of waterproof cement in New York City and that was for the skyscraper being erected at 50 Broad street, New York City to cost \$3,000,000. Our material was used in conjunction with the Dragon Portland cement and over 1,500 barrels was consumed in the operation. Engineers are commencing to realize the durability and the stability of our product and expect to land a number of good orders in the near future."

Walter C. Schultz, dealer in all kinds of building materials, Hoboken, N. J., added: "We have done the largest amount of business during the month of December than for some little time for the same period. The seasonable weather we have had has allowed work to continue much longer than during previous years and has helped our business a great deal. Work of late has fallen off gradually and before long business will enter the dull winter season."

The business of John Mueller, Lockland, Ohio, will hereafter be known as the John Mueller Company, of which Mr. Mueller is president. The firm will continue to deal in builders' supplies in addition to coal, feed, flour, etc.

RETAIL OUTLOOK GOOD IN PITTSBURGH.

Pittsburgh, Pa., Jan. 20, 1913.—Naturally there is not very much doing just now in the retail builders' supply business. Orders for immediate delivery are few and far between. Most of the yards were busy taking stock the past two weeks and find as a rule that they are low and will need to replenish pretty liberally when spring trade starts. The retailers who stuck close to the building business last year "lost out." That is, they did not make any money, at least, and have to be satisfied with it. Those dealers, however, who went after general contracts, notably street and road work, did well. In many sections of the city this business was larger than at any time for several years. Prices were good as a rule and profits were very fair.

Miller & Coulton wound up last year with a sales record that put all previous years out of commission. Their plants in Ohio are in splendid shape and their business in building blocks has grown to such proportions that it taxes their capacity to the utmost to supply the demand.

An official of the Houston Brothers Company reports that they closed up 1912 with a splendid year's total of business. He regards the building outlook as considerably better than last year.

A new retail builders' supply firm at Orrville, Ohio, has been organized by J. E. Crumrell, of that place, and W. B. Taylor, of Benton, Ohio. They will manufacture and handle a general line of concrete building and ornamental supplies.

Adam Wilson, aged 58, died at his home in Pittsburgh December 17th, after an illness of several weeks. He was one of the best-known building contractors in this city. For many years he was a member of the firm of A. & S. Wilson, leading contractors of Pittsburgh. In 1902 this business was incorporated and he became president. He had been president of the Pittsburgh Builders' Exchange and also of the Master Builders' Association at different times.

The Bureau of Highways and Sewers will entertain February 24th to March 1st chiefs of the Bureau of several of the largest cities in the United States. These will be delegates of the Association for the Standardization of Paving Specification.

The Kittanning Fire Brick Company, along with most of the other brick people in town, reports prospects for next year's business fairly good. They say it is a little too early to estimate carefully on the house building situation. Their two plants at Kittanning, Pa., are running full time this winter.

MUCH WINTER WORK IN LITTLE ROCK

Little Rock, Ark., Jan. 18.—Your correspondent called a few days ago on several of the architects and contractors and builders' supply people of this section. Quite a normal amount of winter work is going forward and much is in prospect. The Bank of Commerce, new department store for Pfeiffer Bros., a High School in Argenta, and an eight-story addition to the Gus Blass department stores are jobs under construction. The Oklahoma City Construction Company, of Oklahoma City, Okla., has this last contract. The foundation is just started. Brick and concrete figure in the job. The contractors have put in a branch office at 219 Gazette building. The Krafts Transfer Company, of Little Rock, is assisting in the excavating. Archi-



JUBELIRER APARTMENTS, MCKEESPORT, PA.

tect Geo. R. Mann, Gazette building, drew the plans.

Campbell & Co., contractors, has the contract for the \$600,000 Pulaski County court house to be erected here right soon. Architect Geo. R. Mann drew the plans. It will be built of Arkansas stone.

The G. G. Wood Coal Company was visited. These people handle lime, cement and a general line of builders' supplies. They are giving just about as much attention to this as their old line, the coal business, in which they are pioneers.

W. S. Helton, contractor at Pine Bluff, Ark., is finishing the Sahara Temple of the Shriners. It is quite handsome, of brick and stone, with marble finishings.

Monk & Ritchie are the contractors at Pine Bluff on a ten-story \$350,000 white pressed brick and concrete hotel under way. Much tile and marble will be used in finishing. Architect Geo. R. Mann drew the plans.

The Hansen Products Company, of St. Louis, Mo., has been incorporated with capital stock of \$50,000, to manufacture all kinds of bricks, stones, tiles and other materials for building purposes, etc. The incorporators are Peter C. Hansen, W. A. Dunham, Benjamin T. Durfee of McAlester, Okla., and John H. Sears.

BUILDING RECORD SHOWS GAIN.

San Francisco, Jan. 20, 1913.—The year's building record in California shows unusually rapid progress. Los Angeles is far in the lead, with a total of \$31,367,995, compared with \$23,004,185 for 1911, while San Francisco, with a total of \$23,339,568, shows a gain of nearly \$3,000,000 over the previous year. The Oakland record is over \$9,000,000, and that of San Diego nearly \$10,000,000, almost doubling the 1911 record. A large amount of work is being figured in all the larger towns, not counting the heavy expenditures planned for sewers, wharves, and irrigation development. Figures are now being taken on the U. S. Subtreasury building in this city, and preliminary figures on the city hall, while in Oakland some important school contracts are coming out.

The largest building contract let here in the last month was for the Machinery Hall of the Exposition, amounting to \$509,900. The building will be mainly of wood, but a lot of concrete will be used for machinery footings, and it is expected that an enormous amount of plaster materials will be required for the Exposition buildings and ornamentation.

JUBELIRER APARTMENTS.

The Jubelirer Apartments, of McKeesport, Pa., a cut of which is shown on this page, is a three-story building and contains six apartments, with all the latest ideas in construction. The architect, Mr. C. R. Moffit, of that city, gave it his personal supervision and all of the sub-contractors made it a matter of pride to have everything done in the best possible manner; and so well did they succeed that every apartment was rented before the building was completed.

As this was the first building in the city where hydrated lime was used exclusively in the mason work it attracted considerable attention. The lime was furnished through the Builders' Supply Company of McKeesport, by the Security Cement & Lime Co., J. P. Barbour, Pittsburgh representative. William Nowell of McKeesport was the general contractor and W. H. Stevenson, also of McKeesport, was the brick contractor.

This cut shows the building before completion, but it is now finished and fully occupied.

ANNOUNCEMENT.

After twenty-one years' connection with the Clinton Metallic Paint Company, Clinton, N. Y., as secretary, treasurer and manager, I have sold out my interest in that company, to enter into business on the same lines independently.

I have secured a fine line of raw materials and will put out mortar colors, metallic paint, etc., under my "Supreme" brand, and on my own personal guarantee.

I invite your inquiries for samples and prices, and promise that same will have my most careful attention.

E. B. STANLEY.

L. Ferdinand Zerkel, Luray, Va., for a number of years identified with lumber, building material and planing mill trades in the Valley of Virginia, is establishing himself as a broker and manufacturers' agent for builders' supplies in the territory on the N. & W. railroad from Basic City, Va., to Charleston, W. Va., and on the Southern railroad from Strasburg, Va., to Manassas, Va.

WILL BUILD NEW WAREHOUSE.

Springfield, Ill., Jan. 20, 1913.—John Maier, of Monticello, has gone out of the retail business after a successful career of forty years. He has sold his business to his two sons, Albert and William, who will continue it under the name of Maier Brothers.

V. H. Park & Sons, lime and cement dealers at Decatur, have had plans drawn for a new three-story warehouse which will be started early in the spring. The handsome and substantial structure will replace a wooden warehouse adjacent to the Wabash railroad and was necessary by increasing business.

Harry Burt Metcalf, retailer of Normal, and Miss Myrtle Maddox, of Riverton, were married in the latter city January 1st.

The plant of the National Mastic Roofing Materials Company at Edwardsville, which was entirely destroyed by fire October 9th, has been rebuilt and again in operation. The new plant is larger than the old to take care of orders secured by President B. B. Clawson, who was in Chicago after orders at the time of the fire.

MATERIAL MEN ELECT OFFICERS.

New Orleans, La., Dec. 11, 1912.—The New Orleans Contractors' and Dealers' Exchange held its annual election of officers December 9th, at noon, re-electing Walter F. Jahneke, of the Jahneke Navigation Company, to the presidency. Other officers were chosen as follows: F. L. Bixler, vice-president; George Egdorf, treasurer; directors, James H. Aitken, Charles E. Moroney, George M. Leahy, George J. Glover, J. W. Lennox, J. P. O'Leary, J. C. Maurer, Peter Schaff, James W. Poreh, Herman Thomas, James M. McGowan, Victor Lambou, Joseph Weckerling, A. C. Vreeland, Peter Judlin, Henry W. Bond and John O. Chisolm.

Secretary Koeniger's report showed a total membership of 171, as compared with 148 last year. An enjoyable "smoker," with nearly one hundred members in attendance, was held in the Exchange building last night. The Exchange officers are compiling an official reference book, to contain all the state and city building regulations, lien laws, fire prevention rules and other data of interest to builders, together with a full directory of Exchange members, a resume of the city's building progress and other information useful to the members. It probably will be published and ready for distribution about February 1st.

St. Louis, Mo., Jan. 20, 1913.—The Hansen Products Company was recently incorporated in St. Louis with a capital stock of \$50,000, 77½ per cent of which has been subscribed and paid. The incorporators are Peter C. Hansen, W. A. Dunham and Benjamin T. Durfee, of McAlester, Okla., who hold 125 shares each; and John H. Sears, who holds 12½ shares. The object of the corporation is to manufacture all kinds of bricks, stones, grindstones, tiles and other materials for building purposes.

We take pleasure in printing on this page a picture of the exhibit of the Maryland Lime & Cement Company, Baltimore, Md., during "Maryland Week" at that city, recently. Maryland Week is one of the momentous events in the state of Maryland, and is of particular value to the agriculturists of that commonwealth. The governor, the senators, the mayors and the leading citizens of the state all unite in their efforts to make this week of singular importance to the farming interests.



EXHIBIT OF MARYLAND LIME & CEMENT CO. "MARYLAND WEEK," BALTIMORE, MD.

QUARRIES

OHIO STONE CLUB ANNUAL.

The Ohio State Stone Club will hold its annual meeting at the Boody house, Toledo, Ohio, on Wednesday and Thursday, February 5-6, and the quarrymen of Ohio are cordially invited to be present and participate in the meeting, as matters of deepest importance are to be discussed.

The executive committee meeting held last month at Columbus was one of the most interesting sessions that that body ever held, and preliminaries of the coming convention were fully discussed and committees set to work to prepare reports to present at the annual convention, which will have a bearing on the operation of rock crushers in Ohio in 1913.

TENNESSEE HIGHWAY ENGINEERS ELECT OFFICERS.

Memphis, Tenn., Jan. 18.—Memphis capitalists are identified with the organization of the Batesville Gravel & Material Company, which will operate here and at Batesville, Miss. R. J. and R. H. Darnell, Elliott Lang and R. J. Wiggs are identified with this company. These gentlemen are prominent in building material circles and have the capital to put through anything they undertake.

The Alabama Association of Highway Engineers at Montgomery, in a well-attended session elected the following officers for 1913: W. P. Moore, Lauderdale county, president; J. W. Gwin, Birmingham, first vice-president; T. D. Kemp, Montgomery, associate state highway engineer; R. P. Boyd, Montgomery, second vice-president; D. K. Caldwell, Wetumpka, Ala., secretary.

The Memphis Stone & Gravel Company contemplates considerable work at its Tennessee gravel pits this spring when the weather opens.

The DeSoto Gravel Company, Randolph building, Memphis, has numerous contracts on hand and counts on making active operations during 1913 at its Mississippi gravel pits.

The friends of good roads are offering congratulations to Chas. C. Gilbert, secretary of the Memphis to Bristol Highway Commission, which did much good work last year. He has been elected a member of the lower house of the Tennessee legislature from Davidson county (Nashville). He is secretary of the Nashville Automobile Club and assistant secretary of the Nashville Board of Trade.

CRUSHED STONE SITUATION GOOD.

Pittsburgh, Pa., Jan. 20, 1913.—E. W. Light, A. E. Miller and E. D. Blair, of Bedford, Pa., have organized a \$40,000 corporation known as the Lime & Ballast Company. They have bought a tract of land between the C. R. R. and the B. & O. and have started work on a lime crushing plant and also a stone and ballast crushing plant which will have a capacity of 200 tons per day.

C. K. Morris, successor of A. G. Morris & Son, shut down his Butler county, Pennsylvania, plant recently for repairs. He had a very profitable year's business in 1912 and has on hand several new contracts for road stone.

The Consolidated Stone & Mining Company reports that prices for road stone will probably be higher than last year. They look for quite a demand also for furnace stone before spring. Road contracts will not be booked until the latter part of March or April but the prospects are that there will be a good business then. The company is working its sandstone plant at Ellwood City, Pa., which is decidedly unusual for this season.

INSTALLING EXTENSIVE IMPROVEMENTS.

Geo. W. Patnoe, general superintendent of The Holran Stone Co., New England building, Cleveland, Ohio, informs us that his concern will make extensive improvements and additions to its crushing plant which is located at Maple Grove, Ohio, in order to take care of their steadily increasing business. The present plant is being operated day and night to take care of the steady demand for its full line product, and the business in front of them for the coming year looks good enough to double the capacity.

About January 1st, the Toledo Stone & Glass Sand Company's sand plant was totally destroyed by fire and immediate preparations were made for the rebuilding of same.

LIMESTONE PRODUCTS PLANT IN OPERATION.

The new crushing plant of the Limestone Products Company, Chattanooga, Tenn., located at the foot of Lookout Mountain, on the N., C. & St. L. Railway, is now in operation. This is said to be the most modern plant of its kind in the country, and its capacity is great. The plant is operated by electricity furnished by the East Tennessee Power Company, and General Electric motors are used. Drilling is done by compressed air.

The plant is of very substantial construction throughout and the rock storage bins have a capacity of 600 tons. The initial crusher is a No. 7½ McCully, and the company plans to install immediately a No. 4 auxiliary crusher, which will give the plant a capacity of 500 tons of crushed stone per day of ten hours. The plant has been designed with a view to handling the product as economically as possible. Shipments are made by rail exclusively and the company has its own side-track connecting the plant with the main line of the N., C. & St. L. Railway.

The limestone quarried by this company is of superior quality and well adapted to a variety of uses, such as blast furnace, flux, railroad ballast, road material, concrete work, roofing and various chemical purposes. The company is now making regular shipments. Mr. Charles A. Shinn is in charge of the sales department.

Milwaukee, Wis., Jan. 20, 1913.—The Wisconsin supreme court has rendered a decision permitting the Eden Independent Lime & Stone Company of Eden, Wis., to intervene as a part respondent in the case of the Chicago & Northwestern Railroad Company vs. The Union Lime Company of Marblehead. A hearing on the matter was held in Madison on December 13 and the matter was taken under advisement by the court at that time. The action brought by the railroad company against the lime company has occupied the attention of the courts for some time. The Northwestern is seeking to condemn certain property for spur track purposes.

The Union Lime Company has installed considerable new equipment at its plant, including a new stone crusher which will materially increase the company's output.

The Cream City Lime Company of Milwaukee has accepted the terms and provisions of the Wisconsin workmen's compensation law. The company employs more than twenty men.

The Holran Stone Company, with headquarters in the New England building, Cleveland, Ohio, has decided to make extensive improvements in its stone crushing plant and quarry at Maple Grove, Ohio, in order to take care of the increasing business of that concern that has come to it during the past year. They are operating day and night at the present time in order to keep up with the demand for their stone product.

We reproduce on this page a halftone photo of a portion of the Memphis to Bristol Highway under construction in Tennessee. This especial view is on the summit of the Cumberland mountain plateau, near Monterey, Tenn., and some 130 miles northeast of Nashville. Many county bond issues have been made. A government engineer helped lay out the route from three suggested routes and both the present and former state administrations have done work in this regard. Also a commission of citizens and three engineers appointed by a former governor. These engineers recommended a highway. W. J. Oliver, railroad builder of Knoxville; H. W. Brennan, road engineer of Memphis, and E. C. Lewis of Nashville, largely instrumental in building the present magnificent terminals and union station at Nashville, made this initial report. The work is well under way and may be completed in 1913. Wide gauge and many features will be referred to again. Much of this work is graveled in crushed stone, etc. In the western section of the state sand clay will figure much, and in some localities Camden chert or gravel.

TO BUILD ROADS.

San Francisco, Cal., Jan. 20, 1913.—The state treasurer has been authorized to place on sale \$400,000 worth of State highway bonds for further work on the program of improvements started last fall.

The supervisors and road commission of San Mateo county, California, recently went over the report of Engineer R. M. Morton on the contemplated system of county roads, for which he has prepared plans. The new boulevards will gridiron the county, and will cost about \$1,280,000. The scheme as a whole was accepted. The plan calls for 110.45 miles, including 32 miles of gravel, 25 miles of macadam, and 53 miles of asphalt, with concrete base.

Orange county, California, is also planning a system of improved highways, at an expenditure of about \$1,200,000.

The Granite Rock Company is now installing its crushing plant, near Watsonville, Cal., which will be the largest west of the Rocky Mountains, not excepting the great crushers of the Natomas in the Sacramento valley.

The annual meeting of the Standard Lime & Stone Co., Fond du Lac, Wis., was held a few days ago, at which the following directors were elected: E. H. Lyons, W. I. Hamilton, W. A. Titus, Alfred Frerk, Chicago; Chas. Tesch, Oakfield; Fred Kraeckmann, Chicago; D. D. Sutherland. The directors' meeting resulted in the election of the following officers: E. H. Lyons, president, W. I. Hamilton, vice president; W. A. Titus, secretary and treasurer.

Alpena, Mich., Jan. 13.—Construction is about to be commenced on a \$1,500,000 quarry and stone crushing plant just north of Alpena. E. P. Smith is the head of the new concern, which is backed by and is one of the auxiliary companies of the U. S. steel corporation. The plant will employ 350 people and will manufacture several by-products, besides quarrying and crushing stone. Docks and a breakwater will be erected.

Temple, Tex., Jan. 11.—A huge drive belt weighing 1,600 pounds to be used at the Santa Fe rock quarry, located a few miles west of this city, was received Saturday. The quarry has been idle for several weeks, but operations were started there this week with 150 men at work. The immediate output will be used for ballasting the roadbed from McGregor to Cameron.

The Montgomery Stone Quarrying Company, of 417 Market street, Camden, N. J., has been incorporated to operate stone quarry, with capital of \$7,500. The incorporators are: F. R. Hansell; J. A. MacPeak and F. S. Carmen all of Camden, N. J.

The International Gypsum Co., Calais, New York, has been organized to do a general mining, quarrying and manufacturing business. The capital stock is \$500,000. The incorporators are: Geo. A. Curran, Ben Y. Curran and F. B. Martin of Calais.

The Green Lane Trap Rock Company, of Wilmington, Del., has been incorporated with capital stock of \$150,000. The incorporators are: M. E. Dorsey, A. M. Leech and Ferris Giles, all of Wilmington, Del.



PORTION OF MEMPHIS-TO-BRISTOL HIGHWAY NEAR MONTEREY, TENN.

INDIANA STONE CLUB MEETING

The Rock Crusher Operators of Indiana Hold Brotherly Conference.

On Tuesday and Wednesday, January 14 and 15, the rock crusher operators and macadam road contractors of the state of Indiana held their annual convention in the Claypool hotel at Indianapolis. Ninety-six per cent of the output of the crushed rock of the state was represented as shown by these statistics, and the meeting was devoted to the discussion of quarry operations and marketing of the product. Transportation and delivery is always the greatest problem for the consideration of the rock crusher man, because his product is the cheapest indispensable material that is manufactured today. When one considers that 3,000 pounds of road building material is handled for less than one dollar at the crusher and the quantities used run up into millions of tons, it is clear that the extent of conveying, loading and transporting must always be the governing factor of profits and of the vitals of the operation itself.

President L. B. Hodgkin opened the meeting with a few appropriate remarks about as follows:

President Hodgkin's Address.

"Gentlemen: I desire to thank you as members for the consideration manifested in the interests of this organization during the year that has just passed. You have all been very busy, yet at the same time you have dropped your work when needs be to answer the calls of this organization.

"The primary object of the Indiana State Stone Club, as we all understand, is to create a closer fellowship among those engaged in the stone industry in this state. Also to become better acquainted with one another with a view of establishing a closer relationship which would have for its purpose the exchange of ideas with the various members of the organization as to the best and most economical methods applicable to the development and operation of the stone industry.

"Further, it is the desire of the members of this organization to promote a wider scope of use for the product of their quarries and the various lines of construction, in a more scientific and perfect manner than has heretofore been applied.

"The stone industry is perhaps one of the oldest in Indiana, and one of the least developed, considering its very great magnitude and the possibilities of future development. Much depends upon the concerted action of the members of this organization as to the future growth of the stone industry in the state of Indiana. I hope and trust that every member of this association will put forth every effort to make the best of our organization. We want to succeed, we want to let the people know we have an organization, and we want the organization to do good; and the good that comes from the organization will depend upon the interest manifested and the effort put forth.



L. B. HODGIN, KOKOMO, IND.

"The program as arranged has some very interesting subjects, and subjects that are nation-wide, being discussed in every phase and in every locality. I therefore request that each and every member will be active in listening and participating in the discussions of the various topics listed on the program."

The discussion of the wider use of the product was then taken up and practically every member present exploited his views with regard to the use and extension of his product for road building, street construction and the newer uses of concrete, etc.

Secretary R. M. Van Winkle read a letter from Geo. Hunter of the Sullivan Machinery Company, in which George regretted his inability to be present, but assuring the bunch of his hearty personal cooperation in all of their good deeds. He also read a letter from S. C. Haines, of the Main Belting Company, who said he was present in spirit as well. The absence of neither one of these gentlemen was excused, consequently they will have to make good personally and individually with each and every crusher man in the state of Indiana within the next six months, or they will get barred out of the family and not receive an invitation to the "watermelon meeting," if there should be one next July.

At President Hodgkin's suggestion each of the members was called upon for a brief description of the accomplishments of the year just passed, and the outlook for the future. The consensus of opinion was that the latter part of the year 1912 had been quite satisfactory in a business way, and had it not been for the late start last spring, it would have been a very good business year for the crusher men. But there is always present that "if," which means a whole lot under certain circumstances. However, they are a hopeful bunch and each and every one is of the opinion that barring unforeseen accidents at this time, and also barring any adverse legislation by the General Assembly which would prevent the necessary appropriations of moneys for road construction, there is a good enough prospect for a fighting chance in 1913; but if it should transpire that that mistaken idea of legislation should disturb the practical road laws of the state, it would be a moving back of the hands of progress as far as road construction is concerned, and mean a considerable diminution in the demand of some sizes produced by the rock crushers.

The associate members representing the powder, belting and machinery interests expressed their deep interests in the success of the quarry operators, which was also evidenced by their presence at the convention.

The whole afternoon was given up to a discussion of the topics of the program, and the meeting adjourned about 6 o'clock and repaired to the banquet room adjoining, where a delightful repast was spread with about 50 quarrymen and their associates present who were all in a good humor, to enjoy the good things to eat and the good fellowship.

O. H. Binns, of Logansport, acted as toastmaster. He covered himself with glory, for he is a jolly good fellow and appreciates all the little virtues, as well as the largest faults, of the fellows who were collected there to make merry together. Everybody present had a speech to make, and some of them were funny, though some were solemn. There were a few who were scrappy, but all of them had meat in them, and there was enough education at that dinner to make it worth while for any man interested in the rock crushing business to attend the Indianapolis convention.

Frank Russell, of the Ingersoll-Rand Company, Cleveland, Ohio, has a souvenir in the shape of an imitation fountain pen lead pencil, which was fully appreciated by those who always lose their pencils, and find things at conventions that they like to jot down; in fact, Frank was on the job with many interesting things.

WEDNESDAY'S SESSION.

On Wednesday the proceedings of the association were continued and the dues were raised from \$10 to \$20 per year, and the secretary's office was heartily endorsed, particularly with reference to the association booklet entitled "Facts About Macadam Roads," which has been one of the best talking points in favor of the macadam road that has appeared for some time.

The election of officers resulted as follows:

President, O. H. Binns, Logansport, Ind.
Vice-President, W. M. Forman, Louisville, Ky.
Secretary-Treasurer, R. N. Van Winkle, Indianapolis, Ind.

Executive Committee.

E. T. Milligan, Muncie, Ind.
E. M. Baltes, Ft. Wayne, Ind.
H. E. Helm, Indianapolis, Ind.
Herman Evans, LaFayette, Ind.
R. E. Greely, St. Paul, Ind.
A. A. Campbell, Delphi, Ind.
The attendance was as follows:

ACTIVE MEMBERS PRESENT.

E. B. Taylor, E. H. Meyer, A. B. Meyer, A. & C. Stone & Lime Co., Greencastle, Ind.
E. M. Baltes, Baltes Stone Co., Montpelier, Ind.
O. H. Binns, Casparis Stone Co., Kenneth, Ind.
C. W. McKee, Erie Stone Co., Huntington, Ind.
R. E. Greely, Greely Stone Co., St. Paul, Ind.
L. B. Hodgins, Kokomo Stone Co., Kokomo, Ind.
Peter Martin, Logansport Stone & Construction Co., Logansport, Ind.
E. T. Milligan, Muncie Stone & Lime Co., Muncie, Ind.
H. E. Helm, Spencer Stone Co., Spencer, Ind.
W. M. Forman, J. B. Speed & Co., Milltown, Ind.
R. N. Van Winkle, C. D. Wilson, J. R. Hiatt, The Ohio & Indiana Stone Co., Indianapolis, Ind.
A. A. Campbell, Delphi Crushed Stone Co., Delphi, Ind.

ASSOCIATE MEMBERS PRESENT.

D. R. Morgan, Armstrong Mfg. Co., Waterloo, Ia.
C. F. Burton, Burton Powder Co., Pittsburgh, Pa.
C. A. Spensley, E. I. DuPont Powder Co., Terre Haute, Ind.
J. O'F. Clark, Edgar Allen Manganese Steel Co., Chicago, Ill.
Frank Russell, Ingersoll-Rand Co., Cleveland, O.
B. Z. Good, Loomis Machine Co., Tiffin, O.
C. F. Rabbeitt, Orenstein-Arthur Koppel Co., Chicago, Ill.
W. T. Young, Standard Oil Co., Chicago, Ill.
Fred K. Irvine, ROCK PRODUCTS, Chicago, Ill.

The Bowling Green & Green River Quarries Company, Louisville, Ky., has been incorporated with a capital stock from \$50,000 to \$150,000. Samuel Pickles, of Bowling Green, and J. H. Peter, of Nashville, are the principal stockholders.

John Grob, superintendent of the Columbia Quarry Company, at Columbia, Ill., donated to the highway commissioners of the road district near that city all the rock needed for a big stretch of road.

P. B. Spear, of the Marquette Stone Company, Marquette, Mich., reports an increased demand for crushed trap rock and says that the market for this material is increasing steadily in those markets where it has been introduced.

Shareholders of the Cleveland Stone Co., Cleveland, Ohio, recently elected C. W. Walters a member of its Board of Directors.



R. N. VAN WINKLE, INDIANAPOLIS, IND.



The National Lime Manufacturers' Association

Meets Semi-Annually

OFFICERS.

Wm. E. Carson, Riverton, Va. President
 King McLanahan, Hollidaysburg, Pa. 1st Vice-President
 H. A. Buffum, Rockland, Me. 2nd Vice-President
 Geo. E. Nicholson, Manistique, Mich. 3rd Vice-President
 F. K. Irvine, Chicago. Secretary
 C. W. S. Cobb, St. Louis, Mo. Treasurer
 Wm. E. Carson,
 Chas. Warner,
 Walter Sheldon, } Executive Committee

LIME MANUFACTURERS.

Just as we go to press the meeting of National Lime Manufacturers' Association is being held in the New Astor Hotel in New York on January 22 and 23, and promises to be the most interesting and instructive meeting in the history of the association. President Carson is busily engaged in making arrangements for the meeting, the date for which has just been decided upon. These meetings have always been of the utmost importance and interest to lime manufacturers, and the one this winter should be attended by a large number as the previous meetings have been.

President Carson, in speaking of general conditions, had the following to say:

"The bumper crops of the present year have brought about a pronounced revival in business and industry. This country was never so rich, nor has its trade been ever in sounder condition than at present, and if we have a repetition next year of the unusual agricultural yield of last year, it will place us a long way on the road to an extended period of prosperity. It is by no means certain at the present time, however, that our present prosperity will be more than temporary.

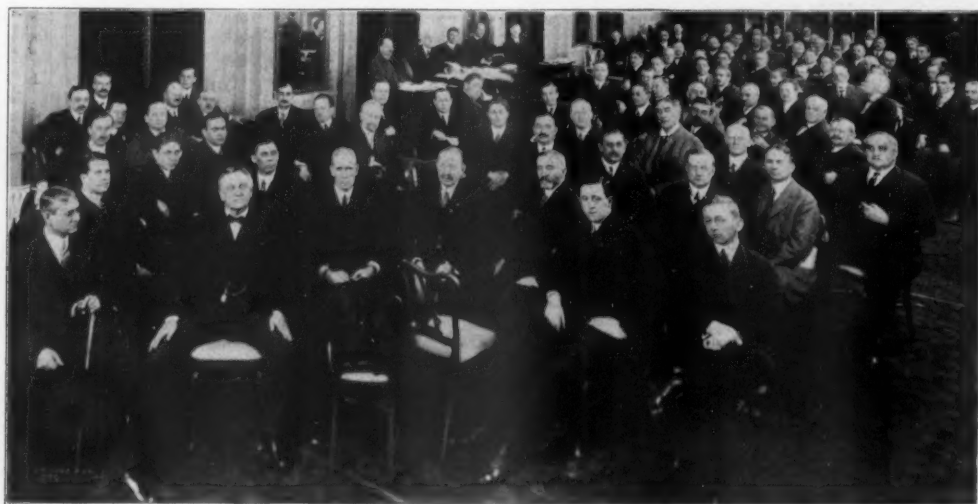
"The prospect of tariff reduction will have a favorable effect upon manufacturing costs and retail prices. The large gains and resources of our banks during the past year is also encouraging, while the possibility of securing reform in our defective national banking laws will be a decided advantage in any liquidation which is now in progress, and is essential to the safe financing of future industry and trade. Safety and prosperity in the future is more dependent upon banking reform than any other factor. It is also certain that wastefulness and extravagance in private, corporate, and public expenditures must be curtailed, and our resources husbanded. Caution should also be taken against the creation of a credit structure based on inflated land or other values, and capital should not be too freely committed to fixed and unproductive forms. The pressure upon the land must also be relieved by a more economical and intensive cultivation of the soil, by the development of agricultural facilities, and by the adoption of more inexpensive methods of marketing farm and manufactured products.

"Only by exercising such conservative methods and precautions can business and industry hope to prevent a collapse of the present level of prices and values, and a consequent readjustment before a period of permanent prosperity is assured. It is however, encouraging, to note that the sub-committee on banking have promised to present a bill before the end of this session, correcting the present law, and throughout the country, the agriculturist is awakening to the necessity of intensified cultivation of his land, and business in general is moving along conservative lines, so that I cannot but see a rosy future for business in the United States."

LIME CONDITIONS.

As is usual at this season of the year the demand for lime has fallen off considerably. This and the let-up in the car shortage has enabled most manufacturers to catch up with orders. This let-up will give the manufacturers an opportunity of filling their stock houses in time for spring trade. The prospects for lime for the coming year, particularly hydrate, are very good. Little change in price on hydrate is expected.

Probably the largest and most profitable year



NATIONAL LIME MANUFACTURERS' ASSOCIATION CONVENTION, HOTEL ASTOR, NEW YORK, N. Y., JANUARY 23.

the lime manufacturers have ever experienced has just closed. The total production of lime in the United States during the year of 1911 was about 100,000 tons short of the year 1910. Without doubt the statistics for 1912 will prove that the total lime business has gone far ahead of the production of 1910. The increased output is due largely to the great demand that there has been for building lime during the past year. The building lime business is to the lime manufacturer the most important branch of his business. For instance, during 1911, of the 3,392,000 tons of lime produced in the United States 1,488,000 tons, or at least 50 per cent of the total production went to the building trade. The balance of the production was used for chemical, agricultural and other purposes.

RAILROAD TO CONNECT WITH LIME PLANT.

San Francisco, Cal., Jan. 20, 1913.—E. U. Leh, manager and chief engineer of the Old Mission

Portland Cement Company announces that the San Juan-Pacific railroad, which will connect the plant with outside freight service at Hollister, Cal., will be rushed to completion within a few months, giving transportation for the output of the new hydrated lime plant by the time it is in working order.

The Pacific Lime & Plaster Company is well satisfied with the conditions prevailing for the last few months. Sales for the last 30 days have been unusually heavy, with a particularly strong demand in the interior, and while the maximum output is maintained, it is difficult to keep up with orders. The hydrated lime is being quite largely used at present for soil fertilization, as well as for other purposes. The company reports collections good and the general outlook encouraging.

John W. Dougherty and J. B. Lloyd are completing arrangements to establish a lime plant near Valley, Ariz., where they own a large tract of lime rock. The plant will be started some time this year.

DEMAND FOR LIME QUIET IN NEW YORK.

New York, N. Y., Jan. 18, 1913.—Foster F. Comstock, president of the Comstock Lime and Cement Company, stated that inquiries for spring business have been quite numerous and he feels optimistic as to what the future has in store. Prices have been well maintained during the past year and he is satisfied as to the amount of business transacted last year. The volume of business was larger than during 1911.

The Kelley Island Lime and Transportation Company reported the lime market quiet last month, with prices firm and steady. Deliveries on outstanding contracts were made during the month, but little new business has been received. These conditions are to be expected at this time of the year which is the dull season in the lime and other building materials trades.

Incomparable

(Twas Born With a Reputation)



FOR
NEARLY
60 YEARS
MOORES
FINISHING
LIME

HAS
BEEN
KNOWN as
STANDARD
IN STATE OF
OHIO

EXCLUSIVE
TO ONLY ONE DEALER SALE IN EACH CITY

"WHITEKOTE IS THE RIGHT COAT"

LIME STORAGE AGAIN.

Almost every month the correspondence that comes to ROCK PRODUCTS discusses the advisability of making up a large quantity of lime putty so as to provide for the steady running of the lime kilns and storing up a supply of the wet goods for delivery to the trade at the time they want it. This, of course, will avoid the losses attendant upon air slaking and the accidents which occur to roofs of lime storage warehouses, which are often very expensive to the lime burner.

In the past we have referred to the system still used extensively throughout the continent of Europe of digging cisterns into the rock and covering the same over after they have been filled with well slaked putty, and after the putty has ripened from a year to fifteen months, remove it from the cistern by the use of large ladles and carry it in wagons having watertight boxes to the job in the shape of putty.

It is undoubtedly one sure way to secure fully ripened putty, and also provides a means for the manufacturer to keep on producing lime for the purpose of filling his cisterns even when the masons and plasterers are out of the market for lime; and as the putty keeps well there is little or no loss attendant on such a system. The main trouble is, however, the first cost of installing such cisterns, and protecting them from the weather and accidents.

Now right at this point the American lime industry has developed a tremendous improvement over the old idea of storing lime in the shape of putty, viz., the more scientific plan of hydrating the product and storing it in paper boxes. Hydrated lime was first introduced some ten or twelve years ago. Like all such radical changes from old established methods, it was at first hard to introduce because the average users of lime are not sufficiently accustomed to the ways and application of technical improvements, and there was but slow progress made at first. It is also true that in the first stages of lime hydration the product was not so nearly perfect as the conditions required, but with the steady improvement in quality of the product up to the present state of just about perfection, hydrated lime became more and more respected as an established building material, until today the reliable brands of hydrated lime are well established, well understood, and highly esteemed by the users of lime, and hydrated lime, in most of the principal markets of the country, gets the preference over the old lump burned lime of the past.

Hydrated lime today cannot be considered as anything less than the greatest improvement which the industry has ever known. It is the only reliable path by which the lime manufacturer can operate his kiln regardless of weather conditions and regardless of the regularity of delivery; and so store his product as to economize the operation of a large plant upon a profitable basis.

It is the answer always for such inquiry as hark back to the old idea of converting the lime into a putty and trying to handle the wet goods.

For the benefit of those who are not already intimately acquainted with hydrated lime, a brief description may not be out of order here, in view of the inquiries which our lime burning readers send to us. Hydrated lime consists of taking the freshly burned lime as it is drawn from the kiln and conveying it to a vessel to which water is supplied in such a way as to impart to the fresh active oxide those elements of water which are necessary to make it well nigh impervious to atmospheric damages, and so to preserve it for an extended period in a condition to receive additional water to convert it into putty at such time as it may be needed in mortars.

The hydrate is an extremely finely divided white powder, fluffy and actually lighter than eiderdown, and when properly prepared it is free from particles of core and other impurities which would be refused in the hydrating process and go over the screen after hydration.

The market conditions of hydrated lime at the present time are, in fact, phenomenal. The consumption of the product can only be compared in its growth to that of Portland cement in the last twelve years. In all probability the consumption of hydrated lime in the year 1913 will be more than double that of 1912, which was nearly three times as much as in 1911. These are not exact statistics but roughly express the verdict of the users of lime on the great improvement in the preparation of the product of the lime kiln which has been achieved by American manufacturers in the past twelve years, or since the organization of the National Lime Manufacturers' Association, and the activity of ROCK PRODUCTS in this field of endeavor in the building material interests.

(Continued from page 38.)

now merged with the common interests of the people in general. The policy has been taken up by practically all civil, social, educational, commercial and labor organizations, and is receiving much encouragement, recognition and stimulus, from day to day, by the constituted representatives of the people of the nation, of the state, and of the many minor governmental agencies.

The people are demanding good and hard roads. They are asking for something better than those primitive qualities with which nature has endowed the roads. To be or not to be is not the question, for, as stated before, everybody says "to be." How to do it is not the question, for there is a great variety of good and proper materials and schemes which are equally adapted to this class of work. But the vital question, the real live issue of the day, is how are we to provide sufficient funds to carry on the work, without encroaching on eternity.

It is not my purpose to disparage any of the suggestions made by the advocates of good roads. Such schemes as the employment of convict labor and material, state or county aid in the form of contributed funds, material or equipment are all unqualifiedly meritorious and should be approved. Each suggestion tends to the right end. But the various schemes individually and collectively have their manifest limitations and shortcomings, especially when it is borne in mind that each county in the state has its hundreds of miles of public roads. When the great cost involved in the construction of each mile of improved roadway is associated with the ratably limited aid afforded by public contribution, the impotency of the schemes proposed is at once apparent. They are entirely inadequate to meet the necessities.

So, it is obvious, that when the public funds or resources are expended or employed in the improvement of the roads, the scheme is at once condemned as opening the door to favoritism. A conflict of interests is provoked, and dissension among those taxpayers who have an equal right to a ratable enjoyment of the pub-



CHAS. KRITZER, HYDRATED LIME EXPERT, CHICAGO, ILL.

lic funds to which they have contributed, at once springs up. And that not without good grounds and legal and equitable justification. To employ the public funds in a particular use or improvement by virtue of which a limited few of the taxpayers are afforded a special benefit which represents to them a commercial value, and to deny this same benefit to the great mass of taxpayers (even though by force of necessity) is nothing short of an improper discrimination.

To give the improvement gratuitously to those who own property in the locality of it is a public donation of so much as is represented by the special benefit which that property will enjoy from the construction of the improvement. That special benefit is represented in the increase in market value which the property enjoys from the construction of the improvement. If the property, if assessed to the amount of this increase in value, and the public pays the remainder, then the public funds, to this extent, may properly be expended in making that improvement, and no general taxpayer may complain, for then there exists no wrongful discrimination or clearly defined partiality. When an improvement is necessarily local in character, that is, one which though public and made under the sovereign power, is local in the sense that it reflects special benefits upon local or contiguous property; that is, such benefits as are not diffused generally upon property in the district, it must be cardinally true that such special benefit should be paid by those who specially enjoy it.

Up to that point, to pay it from the public funds is to infringe upon the rights of the general taxpayers. Above that point, the general taxes are justly and properly expended in the making of the improvement. Up to that point, it would be a gratuity to the owners of specially benefited property. Above that point, the general funds are employed for purely public purposes, and the enjoyment of the improvement is common. Up to that point, it would manifestly be a discrimination, for the benefits are local and exclusive. Above that point, the expenditure of the money is impartially for the benefit of the public in general.

Mr. Logan Walter Page, who is one of the Government agents at Washington, engaged in investigations relating to road conditions and improvements, is authority for the statement that the cost of hauling over the country roads in this country is now about twenty-three cents (23c) per ton per mile. In European countries it costs from one-half to one-third as much as in the United States.

He further states that the loss directly traceable to the bad conditions of roads in this country is over two million dollars a day, and that the amount of saving that good roads would bring would amount to hundreds of millions of dollars each year. According to the report of the Interstate Commerce Commission in 1906, our railroads handled more than 800,000,000 tons of freight, which originated on their respective lines. A great deal of it was made up of the products of farm and forest, and it is estimated by him that at least 200,000,000 tons of it had to be hauled nine miles at a cost of 23c per ton per mile. To have hauled this tonnage over paved roads would have worked a saving of \$250,000,000.

The saving that good roads would work in reference to draft animals alone, according to his estimate, would amount to \$1,000,000,000, not to speak of the corresponding saving in wagons, harness, and the like, it appearing that there are over 500,000 farm wagons manufactured and sold each year.

The profits which would be open to the farmer if he could convey his farm products, as well as dairy and poultry products, to the market at all times of the year, would assuredly be fabulous. Time and space will not permit of deductions which may fairly be made from the data which is available. To attempt it would be merely an iteration of facts known to you all. Let the owner or operator of property devoted to agricultural uses make his own deductions upon premises best known to himself. Let him consider the present ruinous influences of the road conditions upon the returns enjoyed by him from his many and diversified crops and produce, and let him determine whether or not he could profitably afford to contribute to the cost of improving the road over which he markets his products. These advantages, economies and profits in themselves do not constitute the benefits which are contemplated in this article, but they constitute those factors which reflect an increase upon the value of the real estate itself. It is for this increase in the market value of the land that the owner should be called upon to make some compensation in the shape of a special tax or special assessment.

As stated before, it is not contemplated that all the cost of the improvement should be specially assessed upon the property local to the improvement, unless, of course, the special benefits equal the cost of the improvement. In fact, the public should pay for that part of the improvement which is not represented by, or which is in excess of, those benefits which property local to the improvement will specially enjoy, upon the same theory that property is to-day specially assessed in the cities for the making of local improvements, or in the rural districts for the making of drains, levees and the like. The distribution of the benefits, or their apportionment among the several parcels of property assessed, as well as between the property benefited, and the public, are matters which could be very readily worked out along well defined lines.

The assessment against the property could be spread in zones, so that property immediately contiguous to the improvement might be properly charged more than that more remotely located. That part of the cost of the improvement which does not represent special benefits to local property should be paid by the public, and an apportionment between the township, county, state and nation might be provided for by some proper rules of apportionment.

It is not the intention to convey the idea that the State Legislature should so devise a scheme as to make road construction by special assessment in the several localities in this state compulsory, but if a progressive legislature will so provide appropriate legislation that the property owners in each subdivision of the state may enjoy the option of constructing roads by special assessment to be levied under the direction and supervision of constituted legal authority, you will find that the project of road betterment and construction will have been given such an impetus that more good roads will be constructed within a period of five years than would otherwise have been constructed in a century, and a method will have been devised for the raising of necessary funds which will be at once endorsed by the best considerations of fairness to the general taxpayers, as well as by the special taxpayers themselves.

I verily believe that the delegation of power to the local authorities to provide for the construction of roads in this way will at once be embraced and exercised in a great many localities in this state, and that in the course of a short time such an interest will be awakened in the virtues of good roads, and the ultimate economy and profit in their construction, that good roads in the state will become as common as has become the construction of good streets in our municipalities.

To effectuate the plan of paying a part of the cost of the improvement by special assessment, it will be necessary to amend the constitution of this state. The framers of the present constitution evidently did not contemplate the levying of a special assessment for the purpose of road construction. This, in itself, is not strange; for in the earlier constitutions of the state adopted in 1818 and also in 1848, the levying of special assessments for the making of local improvements in cities, or for purposes of drainage and the like, were not provided for. The Constitution of 1870 was the first to authorize the levy of a special assessment for the purpose just stated. The same considerations of public necessity and public expediency which prompted the changes made in the constitution of 1870 in those respects should now prompt the change of the Constitution to permit the levy of special assessments to construct good roads.

The highways constructed and maintained under private ownership have advanced in this country as they have in no other country on the face of the globe. The railroads of this country, which are in their nature and in their centers of operation, highways, represent the highest development in the science of railroad construction. They have been developed to the highest pinnacle of efficiency. The promoters and operators have profited by it. YEA, they have enjoyed more than a reasonable profit. The people have willingly and uncomplainingly paid a special compensation, somewhat in the nature of a special tax, for this public service which made it possible not only to develop the highways of this character, but in addition to that, provide a substantial return for the investment and service.

We have hitherto cheerfully delegated to private ownership and management the operation of this character of highways, tacitly and impliedly acknowledging our own impotency and inability to do it as well ourselves through public agencies. We have, however, retained to ourselves the ownership and management of the common highways. We have as yet, not confessed our inability to improve, manage and operate the roads of the State as well as it could be done under quasi-public ownership.

Verily, the efficiency of Government ownership and management of the public roads is now on trial.

SAND AND GRAVEL

PENNSYLVANIA BIG SAND PRODUCER.

Pittsburgh, Pa., Jan. 20, 1913.—The Warren Silica Sand Company, whose plant is located at Torpedo, Pa., has suspended operations for a short time in order to remodel its plant and make extensive improvements.

Pennsylvania produces 30 per cent of the sand used in glassmaking in the United States—about 400,000 tons. The average value of glass in Pennsylvania, according to the U. S. Geological Survey, is \$1.40 a ton.

The Rodgers Sand Company, of this city, made 1912 by far the best year in its history. It handled a total of 1,250,000 tons of material last year. The line of big steel barges which it had built during the last half of the year enabled the Rodgers company to substantially expand its operations, and the equipment of the company is strictly high-class in every way.

The Moundsville Sand Company closed up a very satisfactory season and had two weeks' work on hand to fill the orders already booked. It furnished sand and gravel for some large contracts, including the Glendale paving, and also big jobs at Wheeling, Parkersburg, West Alexander, Buckhannon and other West Virginia and Ohio towns.

An inexhaustible bed of gravel was discovered six miles south of Boyce, La., by the Hudson Construction Company, who are building a concrete bridge nearby. This discovery is six miles from the Texas and Pacific tracks directly south of Boyce.

The Winfield Sand and Mineral Company, in the Second National Bank building, has shut down its plant in Butler county for a few weeks in order to install more new machinery.

Frederick Ree, of Berkley Springs, W. Va.; B. F. Madore, Bedford, Pa., and Mason R. Welty, John Shoemaker and Morrison Barclay, of Greensburg, Pa., have organized a company with a capital of \$40,000 to develop a fine tract of glass sand property on Willis mountain, near Hyndman, Pa. They will build a sand washing and crushing plant, to be operated by electricity, and to have a capacity of 150 tons per day.

ILLINOIS' LARGEST SAND BOAT.

Springfield, Ill., January 20, 1913.—The Rock Island Sand & Gravel Company, of Rock Island, asked the city council for permission to erect a steel hopper on the bank of the Mississippi river, 12 feet wide, 20 feet high and 100 feet long. The hopper will have a capacity of 125 cubic yards of sand, 60 cubic yards of gravel, 80 cubic yards of stone and 56 tons of coal.

Kahlke Brothers, of Rock Island, have been building for the Builders' Sand Company, of Davenport, Iowa, the largest derrick boat ever used on the Mississippi river. It is 94 feet long, 36 feet abeam, is equipped with a 40-foot mast, 75-foot boom and a clam-shell dipper.

The McCrany Coal Mining Company, of Viola, has changed its name to the McCrany Sand and Gravel Company, and changed the location of the principal office from Viola to Milan. It has also increased its capital stock from \$10,000 to \$25,000.

J. L. Bowlus has moved from Springfield to Lincoln, where he will take up his duties as traffic manager for the Lincoln Sand and Gravel Company. Mr. and Mrs. Bowlus were given a house warming by a number of prominent young people of Lincoln.

The Mississippi Sand Company, of Alton, came out the middle of the month and persuaded the railroads to lift an embargo on sand, and got out in a day an order for fifty carloads. The shipping weather has been very good for the wet sand and many days in December there was no freeze.

Thieves recently stole all the brass and copper from the engine of the Sangamon Sand and Gravel Company on the Sangamon river at Petersburg, and even took the copper wire which transmitted the electricity.

Alva Smith, Orrin N. Staley and E. D. Terry, of Aurora, and M. L. Baldrige, of St. Charles, are interested in a project to open the sand and gravel field near Emporia, Kan., where a deposit ten miles in length was secured on the main line of the Santa Fe railroad. The Joliet Sand and Gravel Company, of Joliet, is also interested in the deal.

PRaises OHIO RIVER SAND.

Louisville, Ky., Jan. 17, 1913.—Prof. A. N. Talbot, professor of Municipal and Sanitary Engineering in the University of Illinois, paid a high compliment to Ohio river sand and gravel during a lecture delivered before the Engineers' and Architects' Club in Louisville. Prof. Talbot asserted that the quality of the Ohio River products is unusually high, and come up to all specifications in building work. Prof. Talbot's talk was illustrated by lantern slides.

The E. T. Slider Company is contemplating improvements of some importance in its plant and equipment. Business with the company has been very quiet as far as Louisville itself is concerned, although out-of-town shipments have held up fairly well, several contracts in various parts of Kentucky remaining to be filled. With other Louisville sand companies, the Slider folk will bid on the contract for the National Theatre building, which will be awarded in the near future. The work is one of the largest jobs in sight.

Andrew Hoertz, a well-known sand man of Louisville, spent the initial part of January on a search for business. At the same time, Mr. Hoertz allowed his leg, which was broken a couple of months ago, to take a rest.

PROMINENT CONTRACTOR PASSES AWAY.

The Louisville (Ky.) trade was grieved recently to learn of the death of Curtis A. Stout, pioneer of the building trade. At the time of his death, Mr. Stout held the position of sales manager of the Ohio River Sand Company. He had, however, been in the sand and gravel business for a comparatively short time, most of his business career being in the role of brick man and contractor. Mr. Stout was born in Louisville in 1841 and lived in this city all of his life. His father, Macauley Stout, was a prominent contractor, and Mr. Stout learned the business under his father's tutelage. During the Civil War he served in the Federal Army, being with Sherman on his march to the sea, and participating in many famous encounters. At the close of that struggle, he resumed contracting work, and many of the stateliest buildings in Louisville were erected by him. Such structures as the Rossmore, the City Hall the Young Men's Christian Association, and other buildings stand as monuments to his ability. For about fifteen years Mr. Stout was sales manager of the Hydraulic Brick Company, which position he held until July 1, 1912, when he joined the Ohio River Sand Company. In December Mr. Stout was forced to give up his work because of illness. Death came just before New Year's.

CHARLES W. HOLLOWAY PASSES AWAY.

Charles W. Holloway, of the firm of Fox & Holloway, sand and gravel dealers, died at his home, 198 Norwood avenue, Buffalo, N. Y., a few days ago. Mr. Holloway died after a lingering illness.

Mr. Holloway was born in Utica in 1845, but went to Buffalo when very young and received his education at the latter city. He has been connected with the Fox & Holloway company all his life. His survivors are his widow, Elizabeth, and two brothers, John R. Holloway and Harry B. Holloway. The funeral was held at the family residence at 2:30 o'clock. Burial was in Forest Lawn.

Little Rock, Ark., Jan. 18.—The sand business in this city is mostly relating to the river sand. There are two or three firms operating on these lines. Mord Roberts is president of the Southern Sand & Material Company, foot of Ashley street, Little Rock. Their car loading place is north of the water works on the Rock Island and Iron Mountain R. R. They also have a large branch at Pine Bluff, Ark., which Rock Products correspondent visited a few days ago. Mr. Roberts states that the prospects for building the latter part of winter and spring in Little Rock and neighboring points is good and that the demand for washed channel sand is holding up very well.

SUBWAY WILL REQUIRE MUCH SAND AND GRAVEL.

New York, N. Y., Jan. 18, 1913.—Charles A. Fox, general manager of the Phoenix Sand & Gravel Co., stated: "We have been awarded contracts to deliver sand and gravel for the subways, but as yet contractors have been unable to commence concreting work as they cannot procure steel. This state of affairs will no doubt postpone heavy delivery of sand and gravel until the early spring months. The prospects for the next year are very bright, with the subways, New York connecting bridge and other jobs in view. We will be kept extremely busy making deliveries for the subways alone."

The Fulton Sand and Gravel Company, of Fulton, N. Y., has been incorporated with capital of \$10,000, to deal in sand and gravel. The incorporators are: Hattie L. Wells, Sanford D. Wells and Egbert J. Carver, all of Fulton, N. Y.

CUTS SAND RATES.

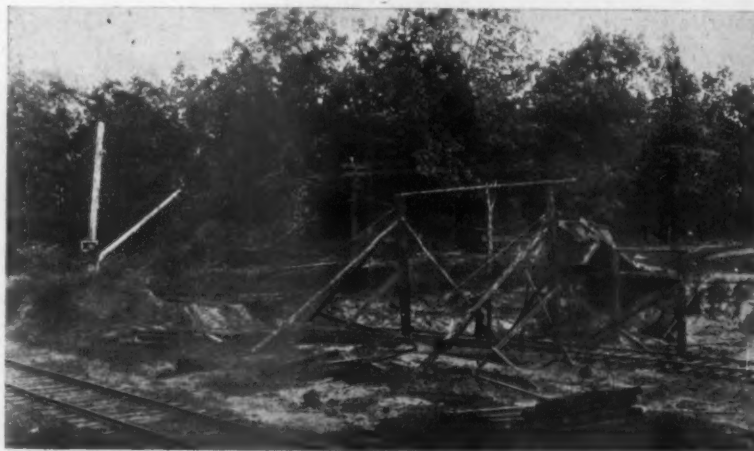
Recently the Wisconsin Railroad Commission cut the rates on crushed stone, sand and gravel on the Milwaukee road December 2 from 20 to 30 per cent. Recently the commission made a decision in the case of the Waukesha Lime and Stone Company, Waukesha, recommending reduced rates. In the commission's decision on the rehearing of the case, it was recommended that the rates therein ordered for Waukesha be made general throughout the state. This recommendation was followed by the North-Western and the Soo lines. The Milwaukee road, however, did not adopt the distance rates.

The Greenville Silica Company, Greenville, Pa., is installing new machinery and increasing their output to 400 tons per day. They have orders enough to run steadily for a year. The officers of the Greenville Silica Company are: J. A. Keek, president; E. S. Templeton, vice president; J. J. Hutcheson, secretary and treasurer, and Wm. Yeo, manager.

Formal notification of an increase in capital stock was filed in the county recorder's office recently, when Deloss S. Brown, secretary of the Peoria (Ill.) Washed Sand and Gravel Company filed the certificate showing an increase of \$15,000 in the capitalization of the company. Up to the present time the stock of this company has been \$25,000, the increase raising it to \$40,000.

The view on this page represents a sand pit near Sewanee, Tenn., in the Cumberland mountains. Sand rock and temporary loading apparatus is illustrated. The State Geological Commission of Tennessee, headed by A. H. Pardue, of Nashville, has been making some creditable investigations on this property and also on the subject of roadwork in that state. The prices paid for sand in the cities of the state vary from about 75 cents to \$1.75 per yard, at the yards, according to the grades. The river sands bring a lower price and fine pit sand commands the premium. Used in mortar or concrete work and to some extent in road work, it is attracting attention. The sandstone of the Sewanee district is under Sewanee coals and is detected usually by large white quartzite pebbles near the top. R. J. Riddle is working the pit three and one-half miles from Sewanee, Tenn.

Fulton Sand and Gravel Company (Inc.), of Fulton, \$10,000; Hattie L. Wells, Sanford D. Wells, Egbert J. Carver, all of Fulton.



SAND PIT NEAR SEWANEE, TENN.

NATIONAL SAND AND GRAVEL ASSOCIATION MEETS

Much Interesting Discussion, and Many Plans Formulated for Benefit of Industry.

The National Association of Sand and Gravel Producers met in annual convention at the Auditorium Hotel, Chicago, Ill., at 10 o'clock Thursday morning, January 16, and were also in session Friday, after which it adjourned sine die.

Chas. D. Warner was elected secretary for the coming year.

President Renwick thereupon made his annual address. He congratulated the members on the healthy and prosperous condition of the association and of business generally. He mentioned the educational work which the organization is carrying on, and defined in detail the progress which had been made in the past year.

The afternoon was given over to a general discussion of the subject of uniform classification, and a basis will be established at a later date. During this discussion many subjects of general interest to the members were brought up.

Classifications in freight rates for sand and gravel shipments were demanded in resolutions adopted at the meeting. President Frank Renwick stated that during the year 1912 the sand and gravel producers of the country, members of the association, did a business of thirty million dollars in freight rates and other transportation charges. He stated that that enormous sum was due to the fact that at the present time there exists no classified freight rate and that sand and gravel producers can be charged whatever prices the transportation companies feel like charging.

President Renwick announced that the treasurer's report would be read on Friday, and also the election of officers for the coming year. He appointed a committee on membership, consisting of W. Frank Bradley, chairman, and P. A. Stewart and Chas. D. Warner.

SECOND DAY.

The second day's convention of the National Association of Sand and Gravel Producers was called to order by President F. W. Renwick at 10:00 Friday morning.

The greater part of the time was given over to the reading of papers relating to the equipment of sand and gravel plants. These were read by Raymond W. Dull, of Raymond W. Dull & Company, Chicago, Ill.; F. M. Welch, Webster Mfg. Co., Tiffin, Ohio, and B. F. Avery, Stephens-Adamson Mfg. Co., Aurora, Ill.



F. W. RENWICK, PRESIDENT NATIONAL ASSOCIATION OF SAND AND GRAVEL PRODUCERS.

"CYL-CONE" SAND AND GRAVEL WASHING PLANTS.

By

Frank M. Welch, The Webster Manufacturing Company.

No complicated process is involved in the production of properly washed sand and gravel, but in even the simplest of work there are right and wrong ways of doing things. Simple as is the washing and separation of sand and gravel, due consideration is necessary in the design and construction of plants which shall be mechanically and financially successful. Many washing plants have been crudely designed and carelessly installed, due to lack of appreciation of the necessity for reasonable attention to the mechanics and economics of the work, with the result that many propositions which should have been profitable investments have proved utter failures, or at best have made only very small returns to their owners and operators.

THE CYL-CONE SCREEN.

The Cyl-Cone plant has for its principal element the Cyl-Cone screen, a combination of cylindrical and conical portions—as the name indicates—so arranged, so set and so operated as to perform every function of the perfect screen while not only avoiding all difficulties of older methods, but actually reducing the costs of the plant for installation, equipment and operation.

The Cyl-Cone screen solves the most obstinate problems that have confronted the sand and gravel industry for the past decade.

Although built and operated always on the same fundamental principles, the Cyl-Cone screen is variable in design, to meet the conditions of the service—the kind and amount of impurities to be washed away, and the nature and number of separations to be made.

Cyl-Cone plants have been installed for handling various sorts of materials, from the very clean and easy to the dirtiest and most difficult. The successful operation of each plant has proved the value of the Cyl-Cone principle and the adaptability of the screen by proper design, to the widest variety of working conditions.

Every Cyl-Cone plant is designed to meet exactly the requirements of the materials which it is to handle, and the situation in which it is to be placed. Too many gravel plants, during the past few years, have been built in a "standardized" form, in accordance with a rather set practice.

It is impossible to design a plant or equipment which can be of highest efficiency for all places and materials. A "standardized" gravel washery is like a "hand-me-down" suit of clothes—exactly fitted only for a "perfect fitter," for all others there must be "alterations." And the need for alterations cannot be determined until the goods are "tried on," and after that the making of radical changes means vexatious delays and needless expense.

So the "hand-me-down" gravel washery is not a wise investment. Every plant should be "custom-made"—designed expressly for the work to be done.

In the preparation of sand and gravel for the market there are three fundamental operations, neglect of any one of which will render the material unmarketable.

1. The foreign matter in the material must be reduced to solution in the water.

2. The material must be separated into marketable sizes, the dirt laden water necessarily passing with the finest sand.

3. The sand must be separated from the dirty water.

Just what the Cyl-Cone screen means to the sand and gravel business may be understood by the following statement of its advantages as compared to plants of other types:

1. The Cyl-Cone screen is adaptable to all materials and will make any desired separations.

2. The Cyl-Cone screen brings the tops of all bins at the same level.

3. The Cyl-Cone screen permits the building of a plant of large capacity, with the bin tops not more than 35 or 40 feet above the ground.

4. The Cyl-Cone screen enables a saving of one-third to one-half in lumber required for the bins.

5. The Cyl-Cone screen enables a saving of one-third to one-half in the cost of erecting the bin structures.

6. The Cyl-Cone screen permits the building of a plant of large capacity without requiring that the materials be elevated to a height of more than forty-five or fifty feet above the ground.

7. The Cyl-Cone screen reduces also by at least one-third the height to which the water must be pumped.

8. The Cyl-Cone screen effects a saving of one-third to one-half in the power consumption for elevating the materials and the water.

9. The Cyl-Cone screen enables a saving of one-third to one-half in the quantity and cost of elevating and conveying machinery.

10. The Cyl-Cone screen washes the materials thoroughly with less water than any other type of plant.

11. The Cyl-Cone screen, as a single unit for the entire washing and separation, eliminates about three-fourths the driving machinery ordinarily required.

12. The Cyl-Cone screen, in short, reduces the cost of a complete plant by one-half to one-third, and enables large savings in operative and maintenance expense.

Screen proportions and arrangement, and the operation also to a certain extent, vary with the conditions, as determined by the materials to be handled and the separation to be made. While the possible variations are many, only three typical conditions need be considered, to give a general idea of the adaptability of the Cyl-Cone screen and the methods of operation.

MATERIALS OF NORMAL CHARACTER.

Normal materials are those found in the general run of gravel banks containing average amounts of dirt and loam, freely combined.

The normal Cyl-Cone plant is equipped to make five sizes of material, although of course the number may readily be made anything from three to seven or eight without altering the principles of design or methods of operation. The sizes of perforations may be varied, of course, and the screen sections may be of woven wire or perforated metal, or any desired combination of the two.

A large pipe furnishes the washing water, while a smaller pipe, passing through the interior of the screen and having small holes along its underside, sprays a clean rinsing water over as much of the material as desired.

The material as received is elevated to the top of the plant by a belt conveyor or bucket elevator and there fed, together with a stream of water, into the upper end of the Cyl-Cone screen, through the charging spout shown in figure four.

Falling first onto the dead plate, the mud and loam are given an opportunity to enter into partial solution in the water before reaching the three-eighth inch screen.

In the three-eighth inch screen the material under three-eighths inch, together with the dirty water, passes through onto the three-sixteenths inch conical screen. The material between three-sixteenths inch and three-eighths inch is discharged from the large end of the conical screen into the coarse sand bin, while the fine sand, together with the dirty water, is discharged into a sluice, which carries it to the settling tank over the fine sand bin.

The gravel rejected from the three-eighths inch screen passes on to the three-quarter inch and one-and-a-half inch screens, which successively separate and discharge the three-quarter inch and one-and-a-half inch material to their respective bins, and permit the over-size to be discharged either into the last bin or to a crusher below, from which it will be elevated and re-screened.

MATERIALS VERY DIRTY.

When the materials are exceptionally dirty, containing seemingly prohibitive quantities of mud, clay, loam and other impurities, with possibly hard lumps of sand, gravel, and foreign matter almost cemented together, the Cyl-Cone screen still can perform the separation of cleaning and washing.

In such conditions the mixture must be submitted to a severe agitation or churning, with large quantities of water, to break up the lumps and get the dirt and loam into solution in the water. This is accomplished by lengthening the dead plate section of the screen, making it possibly several feet long, and fitting it with baffle plates inside, to lift and drop the materials into the water and thus reduce the lumps. Passing this section, the material reaches the screens in shape for washing and separation in the usual way.

MATERIALS EXCEPTIONALLY CLEAN.

In certain fortunate instances the other extreme is found, the materials being so free from dirt and loam that the gravel requires practically no washing and the sand has only a small amount of foreign matter.

Washing water then is supplied only in quantity sufficient to insure proper passage of the materials through the screen.

CONSTRUCTION OF THE CYL-CONE SCREEN.

Composed of two old and time-tried elements—the cylindrical revolving screen and the conical revolving screen—the Cyl-Cone presents an effective combination which, properly proportioned and set to suit local conditions, makes easy the work of washing thoroughly and screening sharply the materials as received, and of distributing the separations to points sufficiently remote from each other to permit bins of large capacities without ridiculous depth.

Usually the cylindrical and conical portions are concentric and built together in one revolving unit. Having to make only three grades of material, the cylindrical portion in this particular screen does not extend to the left beyond the cone, though such extension may be added at any time if desired.

In some instances conditions make preferable a separate construction for the cylinder and cone, each being set at its own best inclination and rotated at its own best speed. Always, however, the cone surrounds the cylinder at the upper or receiving end, catching and re-screening the sand and fine gravel—working with greater effectiveness and less wear because of the larger diameter. The Cyl-Cone screen is built without any central shaft and leaving the interior open throughout for the free flow of material and for the easy insertion of a spray pipe for rinsing water when needed.

The actual cost of the horsepower for elevating the material and pumping the water in the average sand and gravel plant, varies from fifteen cents to sixty cents per foot of lift of material per day. This means that when you reduce the height of your elevator or conveyor from say sixty-five feet above the ground to fifty feet above the ground, you are saving \$2.25 to \$9.75 per day in the actual cost of your horsepower. This saving does not include your saving in maintenance of machinery or of your interest in the investment.

I dare say that more than a few of you do not realize daily profits in your business to exceed these amounts which the Cyl-Cone screen will save. These figures represent the results of most conservative calculations from actual results gained by Cyl-Cone plants. You can check these figures roughly by computing the actual horsepower required to lift say fifty yards of material fifteen feet in one hour. Multiplied by the cost of your horsepower, which will vary from two cents to ten cents per horsepower hour and multiply the result by the number of hours you operate per day.

Being a high-grade, finished product, of careful mechanical design and construction, the Cyl-Cone screen



H. H. HALLIDAY, CAIRO, ILL.

costs more than a series of conical screens, but this extra cost is offset several times over by the much greater saving in the cost of a plant as a whole. The Cyl-Cone plant, therefore, is not only a money saver, but is less expensive than the other types.

Patents are pending covering every feature of the Cyl-Cone screen in all its variations.

Mr. R. Crawford, of the Chicago "AA" Portland Cement Co., Chicago, Ill., called the attention of the association to the fact that the state highway commission of Illinois is to build an experimental road in La Salle county and was asking for bids on the materials for its construction. This means a great thing for the Illinois members of the association, who will probably furnish it at absolute cost. The Chicago Portland Cement Co. will donate part of the cement. This experiment is intended for a great object lesson and a good deal depends on it.

Following this there was a general discussion in regard to formulating plans for increasing the membership, and also the matter of fixing the dues was arranged. Hereafter the basis will be \$5.00 a year, although the initiation fee will remain the same—\$15.00.

It was an enthusiastic meeting and all the members present expressed a desire to assist the membership committee by making personal efforts to bring in new members in their immediate vicinity. All present agreed that much progress had been made in the past year, and for a young association the results had been all that could be expected.

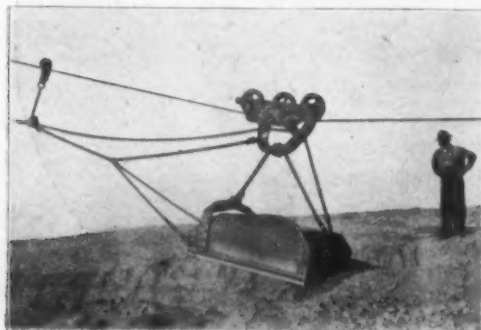
The officers who had served the past year were all re-elected by unanimous vote.

The new members who joined the association are as follows: W. T. Eaton, Lake County Gravel Co., Libertyville, Ill.; E. L. Stark, Attica Gravel Co., Attica, Ind.; Sabula Sand and Gravel Co., Sabula, Iowa; J. A. Moran, Interstate Material Co., Davenport, Iowa; Barnes Sand & Gravel Co., Piketon, Ohio; Symonds Bros. Company, Majestic building, Milwaukee, Wis.

The meeting was then adjourned, all voting it a success.

Those present were as follows:

F. M. Welch, Webster Mfg. Co., Tiffin, Ohio.
F. E. Hall, V. J. Staller Co., Cincinnati, Ohio.
C. M. Ault, The Barnes Sand & Gravel Co., Piketon, Ohio.
F. G. Pulley, ROCK PRODUCTS, Chicago, Ill.
G. A. Olsen, Dealers Record, Chicago, Ill.
Chas. D. Warner, Dealers' Record, Chicago, Ill.
J. A. Moran, Interstate Material Co., Davenport, Iowa.
R. A. Rogers, Interstate Sand & Gravel Co., Terre Haute, Ind.
E. C. Theobald, Anderson Theobald Co., Vincennes, Ind.
T. E. McGrath, Mackinaw Sand & Gravel Co., Lincoln, Ill.
W. Frank Bradley, Ohio & Michigan Sand & Gravel Co., Toledo, O.
R. Wilkinson, Lincoln, Neb.
W. T. Eaton, Lake County Gravel Co., Libertyville, Ill.
E. W. Renwick, Joliet Sand & Gravel Co., Chicago, Ill.
Colog M. Avery, Stephens-Adamson Mfg. Co., Aurora, Ill.
Raymond W. Dull, Raymond W. Dull & Co., Chicago, Ill.
G. B. Miller, Winona Lake, Ind.
P. A. Stewart, Kickapoo Sand & Gravel Co., Attica, Ind.
F. W. Renwick, Chicago Gravel Company and Joliet Sand & Gravel Co., Chicago, Ill.
E. L. Stark, Attica, Ind.
R. E. Hammond, Chicago Gravel Co., Chicago, Ill.
F. S. Phipps, Chicago Portland Cement Co., Chicago, Ill.
H. H. Halliday, Halliday Sand Co., Cairo, Ill.
L. V. Lindquist, Stephens-Adamson Mfg. Co., Chicago, Ill.
J. J. Bassett, J. C. Buckbee Co., Chicago, Ill.



BUCKET AND CARRIAGE.

A NEW SAND AND GRAVEL HANDLING PLANT.

A modern sand and gravel handling plant has been put in operation this past season by the Beloit Sand and Gravel Co., at Beloit, Wis. This plant is located on the Chicago, Milwaukee & St. Paul Railway. A sidetrack runs from the main line to alongside of the loading bins. This sidetrack has a slight grade, so that cars pass to the loading bin by gravity and are held at the loading point by braking the car. The car after being loaded is allowed to pass on by releasing the brake and thus make room for the next car.

The bins are of timber construction and are supported on a concrete foundation wall. The sand and gravel is loaded into cars from these bins, the discharge chutes being high enough so that the sand and gravel flows to the cars by gravity. The sand and gravel is separated into four sizes by a four-foot diameter by sixteen-foot long revolving screen, which is located over the bins. The sand and gravel before being spouted into the revolving screen passes over grizzly bars set far enough apart so as to allow all the commercial size of sand and gravel to pass through and directly into the revolving screen. The over-size material passes over the bars and down to a crusher located at ground level, where it is crushed and then re-elevated to the revolving screen by a continuous bucket elevator.

The sand and gravel is excavated, conveyed and elevated to the overhead hopper by a Shearer and Mayer draglin cobblerway excavator. This cobblerway excavator is unexcelled for this class of work, as it



BUCKET DUMPING.

digs, conveys and elevates the material in practically one operation, thus avoiding rehandling of material and the necessity of installing conveying machinery to handle the material after it has been excavated. It is simple in construction and operation and will dig equally as well under water as it will in a dry pit.

This excavator consists of a bucket and carriage mounted on a slack track cable. This track cable is supported at the power end by a mast and the opposite end is fastened to a suitable anchorage. This anchorage can be so arranged that the end of the cable can be readily shifted to change the line of operation. The machine is operated by a double friction drum engine. From the front drum a wire cable, called the load line, leads through a sheave on the mast pole to the bucket mountings. This cable serves the double purpose of a loading cable for loading the bucket and a pulling cable, for pulling the bucket along the main cable to the dumping point.

From the back drum a wire cable, called the tension line, leads to a set of fall blocks attached to the mast pole. These blocks afford a means for slacking and tauting the track cable, one end of which is supported by the fall blocks and the other end is fastened to a "dead man" planted in the bank of the pit or stream opposite the dumping point.

While the bucket is loading, the track cable is slack; after the bucket is loaded the engineer gradually tightens the track cable, thus lifting the load out of the water or pit while the load line hauls the bucket up the track cable to the dumping point. When the bucket reaches the dumping point, a block traveling on the track cable and attached to the dumping chain is arrested by a stop clamped on the track cable and the pull is thereby transferred from the bale chains to the dumping chain connected with the rear end of bucket and the bucket is dumped automatically. After dumping, the bucket returns to the loading point by gravity. This is a very important



BRIDLE HITCH.

feature of the machine, as no power is required to return the bucket to the loading point.

The cableway excavator was furnished by Sauerman Bros., Chicago, Ill., who are the selling agents and consulting engineers for the Shearer and Mayer Draglin Cableway Excavator. This firm make a specialty of cableway engineering and the economic handling of material.—Advertisement.

The Newman Silica Sand Co., Massillon, Ohio, which was recently incorporated for \$10,000, has leased fifty acres of land about five miles north of Massillon. This land is wholly underlaid with a very high grade of silica rock running in thickness from 16 to 60 feet. There is only one farm between their property and the famous Coxey Quarries, which produces the noted Coxey silica sand. The incorporators of the firm are: A. L. Williams, president; E. R. Davis, vice president, and Chas. D. Reese, secretary and treasurer. The company has constructed a strictly up-to-date plant and will be ready to ship sand by the first of February. The quarries are located on the Pennsylvania and the B. & O. railroads.

S. E. Worrell, the well-known manufacturer of drying machines for sands, silica, lime, clays, minerals, phosphates, fertilizers and other products, recently informed a representative of **Rock Products** that the past year has witnessed a marked increase in the volume of business which came to his establishment, located at Hannibal, Mo. The South and Central American export trade with this concern has assumed satisfying proportions during the past twelve months, as well as the transactions negotiated in the home country.

San Francisco, Cal., Jan. 20, 1913.—The Navy Department, after taking figures on the transportation of 30,000 tons of sand and gravel from Puget Sound to Pearl Harbor, T. H., has rejected all bids and returned to the original project to use the navy collier Nero for this work. The Nero is now undergoing repairs at Mare Island, but will be ready for the work in a short time. The material will be loaded at Richmond Beach, near Seattle, the contract for supplying it having been let to the Richmond Beach Sand and Gravel Company. Arrangements are being made for much additional work at the Pearl Harbor station, and it is not likely that this contract will be the last of the kind to be placed by the government.

The Camano Head Sand and Gravel Company has been incorporated at Camano Head, Wash., with a capital stock of \$50,000, by J. H. Fox and W. J. Robertson.



BUCKET NEARING DUMPING POINT.



**SAND-LIME BRICK ASSOCIATION
Meets Annually
OFFICERS.**

S. O. Goho, Harrisburg, Pa. President
F. B. Allen, Toronto, Ontario. Vice-President
W. E. Plummer, Jr., Buffalo, N. Y. Secretary
J. L. Jackson, Saginaw, Mich. Treasurer

EXECUTIVE COMMITTEE.

G. Silvester, Calgary, Alta. Canadian Division
E. G. Chapman, Minneapolis, Minn. West'n Division
W. M. Burchfield, Rochester, N. Y. Eastern Division
H. H. Tift, Tifton, Ga. Southern Division
W. L. Penfield, Willoughby, O. Central Division

SAND-LIME BRICK ACROSS THE ATLANTIC.

Sand-lime brick in England have proved to be a success in past usages, but the full possibilities of their purpose are only being awakened to at the present time. Germany is the home of the sand-lime brick, and it was from that country that England and America conceived the idea. The business of manufacturing sand-lime brick became active in 1901, and since that time has flourished and a vigorous promotion of the industry has obtained. In some localities where good sand is easily available, the industry has done remarkably well and accrued to the profit of its operators.

On the Continent, too, sand-lime brick have undoubtedly been a splendid success, and their use in Germany and elsewhere is on the increase. Experiments have been made in the Royal Mechanical Testing Laboratory at Charlottenburg, in the Bavarian Crafts Museum at Nuremberg, the Royal Testing Station at Munich, and in other state and private institutions, with regard to sand-lime bricks, and they have proved that sand-lime brick are, by reason of their high crushing strength and resistance to fire and frost, a superb building material. As a result of fire tests to which sand-lime brick were submitted at the Royal Mechanical Testing Station, it was certified that "whilst the inner surfaces of the masonry were red hot, the outer surfaces remained cool, which is to be attributed to the low heat-conductivity capacity of sand-lime bricks."

Not only are sand-lime brick used today by private builders, but municipal and state authorities are showing a great preference for this material for buildings of all kinds. In Berlin, for instance, sand-lime bricks have been unconditionally passed for all purposes—including facade blocks, as well as parapets, columns, balustrades and chimney stacks, which are made of sand-lime mass.

TIFT SILICA BRICK DISPLAY

Variety of Shades and Unique Manner in which Brick Were Laid at South Georgia Land and Agricultural Expositions Wins Praise of Visitors.

One of the most attractive displays at the South Georgia Land & Agricultural Exposition, Tifton, Ga., was that of the Tift Silica Brick & Stone Company. It was attractive because of the unique manner in which the brick were laid in the various panels. There were brick laid in English, Dutch, Flemish and other bonds with possibly every shade of mortar color obtainable. In arranging for this display, the Tift Silica Brick & Stone Company spared no expense of time and labor in order to produce the desired results. This attractive exhibit drew immense crowds to the Tift booth and brought forth praise from visitors. The front of the booth was laid off with a low fence built of their beautiful white brick set in black mortar with a three-foot gate. On the gate columns exhibits of sand just as it is mined from their immense sand hills and sand and lime ground up to a fine powder with which the brick are made were artistically displayed and brought forth many comments. On both side walls dozens of photographs of buildings erected of their beautiful white brick and several large frames of letters of testimonial from builders, contractors and architects were displayed. The floor was covered with their beautiful gold-like sand which added considerably to the attractiveness of the exhibit. Dozens of "Build With Brick" signs, the company's slogan, were displayed around the booth, and advertising matter distributed throughout the entire main building.

The Tift Silica Brick & Stone Company pride themselves on the fine line of brick they manufacture, as it is possible to meet the requirements of the most exacting builder. As an illustration of the progressive manner in which this company conducts its business, at its sales offices located in this city, their brick are displayed in panel form and can be seen in neat and appealing bonds.

The Tift Silica Brick & Stone Company has one of the best brick businesses in the south, and experiences no trouble in the sale of their entire output. They have a large territory composed of cities in Georgia, Alabama, South Carolina and Florida.

Illinois Stone Co., Chicago, Ill., has increased its capital stock from \$100,000 to \$150,000.

The capital stock of the Antrim Lime Co., Grand Rapids, Mich., has been increased from \$28,000 to \$50,000.

A big trap crushing plant is to be located near Sault Ste. Marie, Mich., in the near future by Martin & Company.

S. J. Ferguson of Meridian, La., has purchased twenty-seven acres of gravel land and will erect a plant in a short time.

The quarry and lime kilns at Texas, Md., owned by the Tome Estate, formerly the V. T. Shipley property, have been leased by Daniel Feeney, of Texas.

Belton, Tex., Jan. 10.—The old Lantry-Sharp rock quarries one mile northwest of Belton are to be opened again in a few days, with William O. Donnell as manager. Employment will be given to about 125 men.

At the Kavanaugh Sand Company's place in North Memphis, along the Louisville & Nashville R. R., they have special trackage and dumps. The management report prices ruling about as for the last year and business normal.

The Grangers' Lime & Marble Company, of Danbury, Conn., has recently been organized for the purpose of producing and selling ground limestone. The company is establishing an extensive plant near West Stockbridge, Mass. Wilson H. Lee, of New Haven, is president, and Royal D. Tomlinson, Danbury, is first vice-president and general manager. Wilbur F. Tomlinson, also of Danbury, is the second vice-president and secretary. The treasurer is Seymour S. Green, of New Milford, Conn.

At a meeting of the stockholders of the Michigan Lime Company, Grand Rapids, Mich., it was proposed that the Michigan company unite with the Petoskey Crushed Stone Co., and the Superior Lime Co., both located at Bay Shore. An increase of capital stock was authorized from \$120,000 of common stock to \$300,000. It was planned to have holders of the \$80,000 of Michigan Lime Co. preferred stock exchange their holdings for an equal amount of the bonds to be issued by the merged company.

"Ruggles-Coles Road Machines" is the title of a 12-page pamphlet just issued by the Ruggles-Coles Engineering Company, 50 Church street, New York, and the McCormick building, Chicago. It contains information with illustrations of the Ruggles-Coles portable and semi-portable drying and heating plants for bituminous concrete work, and also describes the new Ruggles complete drying, heating and mixing plant outfit for road work. The pamphlet will be sent on request to any of the Ruggles-Coles offices.

A new bulletin has come to the desk of the editor, which is gotten out by the Webster Manufacturing Company, Tiffin, Ohio. The pamphlet contains 34 pages and is descriptive of the Cyclone screen used in sand and gravel washing operations. It is replete with diagrams and reproductions from photographs and explains in detail the principles and workings of the screen, showing actual illustrations of plants in which it is being used successfully. The booklet also contains illustrations and descriptive matter of the belt conveyors manufactured by the Webster company, sheaves for Webster rope drives, Duplex pivoted bin gate, belt conveyor take-up, tripper for belt conveyors, etc. The booklet is of much value to sand and gravel operators and will be cheerfully furnished upon application to either their Tiffin, Ohio, New York or Chicago offices.—Advertisement.



LOUISVILLE PLASTER MEN OPTIMISTIC.

Venturing a peep into the future, wall plaster men are brimming over with optimism, accounted for by the unusually large number of valuable structures which are to go up in 1913. One which lies in the immediate future is the National Theater building at Fifth and Walnut streets. The theater is to be one of the very handsomest in Kentucky, and the wall plaster contract offers a plum that will attract bidders in and out of Louisville.

B. J. Campbell & Sons, closing a splendid 1912 business, are looking ahead to a continuation of their stride.

The Atlas Wall Plaster Company is doing a normal January business, and expects a steady increase after February 1. The company is laying aggressive plans for the current year, having put in bids on important contracts to be let shortly.

After a close election, H. F. Cooper was selected to represent wall plasterers of Nashville, Tenn., on the directorate of the Builders' Exchange at the annual meeting of that organization. Mr. Cooper is one of the most prominent of the Nashville wall plaster men and his election insures adequate representation for that branch of the building trades.

OKLAHOMA GYPSUM.

There are three lines of gypsum hills in western Oklahoma. The first extends from Canadian county through Blaine, Major, Woodward, Harper and Woods counties to the Kansas line. These "Gyp Hills" are from 100 to 200 feet high, capped with two ledges of massive white gypsum fifteen to twenty feet in thickness. The second line of hills lies forty to fifty miles to the southwest and is in general parallel with the first line. This line passes through Caddo, Washita, Custer, Dewey and Ellis counties. The hills are low, white topped, rounded knolls. The third line of hills extend through Jackson, Greer, Harmon and Beckham counties. These hills consist of long, steep cliffs and rounded mounds. The ledges of gypsum are from ten to twenty feet in thickness. It has been estimated that there are 123,000,000,000 tons of available gypsum in Oklahoma.

Gypsum occurs in five forms: Rock gypsum, gypsite, concretionary, selenite and satin spar. The rock gypsum is the most abundant in the state. It forms the massive ledge of the Gypsum Hills. It varies in color from pure white to gray, bluish white and pink.

Gypsite is also present in large amounts. It is known as earth gypsum or dirt gypsum and varies in color from white to gray and brown. The concretionary forms occur as rounded lumps and are found scattered through the red clay. The selenite is a crystallized form. The crystals are diamond shaped. When pure, selenite is transparent. It is often of a pinkish color. Satin spar is crystallized in long needle shaped crystals. Its appearance is about like the selenite. It occurs in the clay in beds from very thin sheets up to four or five inches.

There are at present ten gypsum mills in the state. Rock gypsum and gypsite are the forms used. The manufacture of gypsum plaster is very simple. The raw material is heated to a temperature ranging between 330 degrees and 430 degrees to remove the water of crystallization. Just enough water is left to start crystallization when water is added.

LATH.

As indicated in our last issue, the price of expanded metal lath has been advanced by the largest manufacturers. The advance was nominal, just enough to cover the increased cost of steel sheets. The condition of the trade is excellent and the demand during 1913 will probably exceed any year in the past.

It is understood that there are only a few cargoes of spruce lath afloat, due to the closing of navigation at many of the eastern ports. A few all-rail shipments are being made. Prices remain firm. It is not likely that the low figures that maintained a year or so ago will occur again for some time to come.

F. P. Morgan, incorporated, of Manhattan, New York, has been organized to deal in plain and ornamental plastering, with a capital stock of \$10,000. Frank P. Morgan, Annie Morgan and Robertina H. Morgan, of 271 W. 125th street, New York City, are the stockholders.



PAVING BRICK MEETING.

The annual meeting of the National Paving Brick Manufacturers' Association will be held in the Green Room of the Congress hotel, Chicago, Ill., March 3-4-5. Will P. Blair, secretary of the association, requests us to announce that the coming meeting is one of vital importance to the manufacturers of paving brick who are interested in the expansion of the uses of their product, and a full attendance is expected.

BRICK CONCERNS INSTALL NEW EQUIPMENT.

Louisville, Ky., Jan. 17, 1913.—Work has progressed satisfactorily on the Carter county plant of the Louisville Fire Brick Company and the new outfit will be put into commission about April 1. J. H. Bell, secretary of the company, has gone to look over work on the plant now in course of construction. Most of the equipment has been ordered and is being installed as fast as the buildings are completed. Orders are coming in nicely and the company expects 1913 to be a big year, both for the Louisville yard and that in Carter county.

The Bannon brick plant in South Louisville will resume operations in the near future, after a close-down because of the fire which recently destroyed much of the equipment. It is now the aim of officers of the company to make the place as nearly fireproof as money can do, and new equipment, replacing that destroyed, is being ordered with that end in view. A new drier is being installed and the plant will be in excellent shape by the middle of February.

Extensive improvements are being planned by the Hillenbrand Brick Mfg. Company, controlling two yards in Louisville. A new dry press is included in the equipment to be installed. Other machinery will be purchased and the plants made modern in every respect.

March 1 has been set as the date for the beginning of operations by the recently formed Coral Ridge Clay Products Company. The boilers have arrived and will be installed at once, while the drier and kiln will be completed in the early future. President W. D. Roy will give much of his time to the new enterprise, and regards the future of the plant as bright.

The Hydraulic Brick Company's plant is on the market, and several brick concerns are dickering for the two yards. Equipment with a daily capacity of 100,000 brick is to be sold when the price asked is reached. A. J. Jungerman, residing at the Seelbach Hotel, Louisville, is receiving bids, having been authorized to carry on negotiations.

The brick manufacturers of Nashville put up J. P. Fulcher as their candidate for the board of directors of the Builders' Exchange of that city, and Mr. Fulcher was elected after an exciting contest.

ILLINOIS CLAY NOTES.

Springfield, Ill., Jan. 20, 1913.—The Banner Clay Works at Edwardsville is planning many improvements to its plant. Changes under consideration include re-arrangement of the building to avert damages from an overflow of Delaplaine branch and the installation of new machinery.

Wilcox & Sons, proprietors of the Funk's Grove Tile Factory, had an exhibit at the Farmers Institute, meeting at McLean, of samples of a curved vitrified clay tile made by them, especially for silo construction. The firm reports a large business for this material in the vicinity of McLean.

The Decatur Brick Manufacturing Company succeeds the old Decatur Brick Company, of Decatur. The directors elected the following officers: President, John F. Mattes; vice-president, S. A. Tuttle; secretary, J. L. Bennett; treasurer, J. A. Corbett, and general manager, E. D. Mattes. The company has been incorporated with capital stock of \$10,000, and it is stated the purpose is to manufacture and sell brick and building material.

Orders enough ahead to last six months were reported at the fire brick plant of the Joliet Refractories Company at Joliet. Among the big orders received recently was material for a big coke oven system for the plant of the Republic Iron Company, at Youngstown, Ohio, and the Minnesota Steel Company at Duluth, Minn.

CLAY PRODUCTS OF CANADA.

The output of clay products in Canada in 1911 was valued at \$8,359,933, against \$7,629,956 in 1910, an increase of \$729,977. In 1911, 419 active firms reported, against 438 in 1910; the number of employees averaged 9,131 in 1911 and 8,656 in 1910, while the wages paid were \$3,524,058 in 1911, as against \$3,308,609 in 1910. Of the total value of production in 1911, building and paving brick, including fireproofing, contributed \$6,915,792, or nearly 84 per cent.

The total approximate consumption of clay products in Canada during 1911 was \$13,416,537, of which about 62 per cent was of domestic production. In 1909 the approximate consumption was valued at \$9,172,995, of which about 70 per cent was of domestic production.

ALONZO ROSE PASSES AWAY.

Alonzo Rose, director of the Greater New York Brick Company, died at his home at 66 Clinton avenue, Kingston, N. Y., January 6, at the age of seventy-three years. He started when a young man in the brick business and built up a fortune under the old system of selling brick in New York City. He was a member of the New York Building Material Exchange and a former member of the Masons' Material Dealers' Association. The funeral was held at his home, January 9, and was attended by many building material men and many of the prominent brick manufacturers along the Hudson river. At the annual meeting of the Greater New York Brick Company on the twenty-first of January, resolutions of condolence were introduced.

Des Moines, Iowa, Jan. 20, 1913.—Harry L. Holbrook, sales manager for the Marshalltown Sewer Pipe and Tile Company, of Marshalltown, and Miss Amanda Marguerite Rohwedder, of State Center, were recently married in that city.

The Des Moines Brick Company, of Des Moines, was another clay manufacturing company which, like the Gary, Ind., concern, utilized the parcels post for sending samples of its paving brick to its customers and municipal officials, who are interested in the product. A nine-pound specimen sent out called for twenty cents postage.

The Sanborn brick plant and yards at Portage, Wis., have been purchased by Herman Kutzke, a contractor, who is remodeling the plant, installing new machinery and preparing to begin manufacturing operations within the near future. The concern turns out "Portage Cream Brick." It is understood that H. F. Addeltdt will assume active management.

The National Terra Cotta Company, Kansas City, Mo., capital stock \$150,000, has been incorporated, to manufacture, buy, sell and deal in and with terra cotta and all kinds of clay products. Incorporators, Andrew F. Brooker, B. A. Green, Richard P. Edwards, all of Kansas City, Mo.

The McEwing and Thomas Clay Products Company has been incorporated in St. Louis, Mo., with a capital stock, fully paid, of \$2,000. The incorporators are, A. T. Geesbeck, who holds 17 shares; W. G. Thomas, Chas. E. McEwing, and Chas. P. Tilley, who hold one share each. The company will manufacture and sell all kinds of clay products.

The annual directors' meeting of the Banner Clay Works was held recently in Edwardsville, Ill. The company has a plant in Edwardsville, but the corporation is a St. Louis one and the offices are in the latter city. Plans for increasing the capacity of the plant and rearranging the buildings were considered at the meeting. Several changes will be made to avoid future inundation. The kilns have been filled with brick for early spring delivery and the plant is closed for the winter.

The American Brick Company of Wilmington, Del., has been incorporated with capital stock of \$2,000,000. The incorporators are: Herbert E. Latta; William P. Maloney and Norman P. Coffin, all of Wilmington, Del.

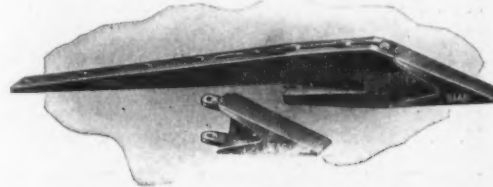
The Glens Falls Brick Company of Queenbury, N. Y., has been incorporated to deal in stone, brick and artificial stone, with capital stock of \$15,000. The incorporators are: Daniel P. DeLong, Glens Falls, N. Y.; Archibald S. Derby and Grenville M. Ingalsbe, of Hudson Falls, N. Y.

The Pennsylvania Impervious Brick Company, of Wilmington, Del., has been incorporated with capital of \$350,000. The incorporators are: W. J. Maloney, H. E. Latta and N. P. Coffin, all of Wilmington, Del.

RENEWABLE POINT DIPPER TEETH.

Dipper teeth for steam shovels and dipper dredges must be kept in efficient condition constantly in order that economical operation may result. This is impossible with one piece tooth, as several hours are consumed in renewing a set of teeth when worn out. Fortunately this problem is very successfully solved by the renewable point teeth made by the Edgar Allen American Manganes Steel Company, of Chicago, Ill., and New Castle, Del.

Reference to the accompanying cuts makes clear the construction of these teeth, and shows that when the point or cutting edge of the tooth is worn out it is only necessary to renew the point.



PANAMA REVERSIBLE TOOTH.

No rivets need to be removed, and as the point is secured by only one or two bolts a full set of points can be renewed in a very few minutes, which means that the shovel is put out of commission a correspondingly short time. The merit of these teeth is readily recognized.

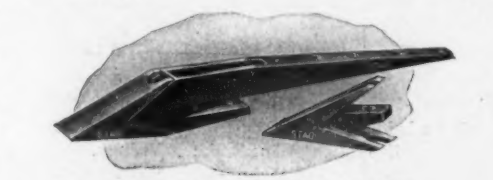
The two designs which are most widely used are the Mason and the Panama, both of which are



MASON TOOTH

clearly shown in the illustrations. The Panama Reversible and the Pemberton Reversible teeth, which are also illustrated, are preferred by a large number of steam shovel operators, for the reason that when the point is partially worn it can be reversed, thus giving practically a new cutting edge, and making it possible to secure a maximum service with a minimum of scrap.

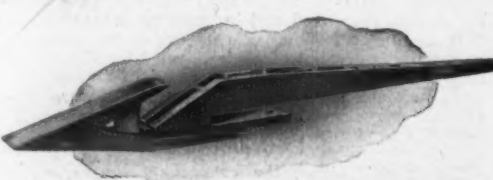
Either of the four designs are applicable to any make or size of steam shovel or dredge dipper, and have been tried out in the hardest of rock digging for years, so that there is no question as to their practicability and success. Their use is now



PEMBERTON REVERSIBLE TOOTH

almost universal. Thousands of them have been and are being used on the excavation work of the Panama canal, and most of the large operators, as well as the smaller ones, throughout this country would not consider their shovels well equipped without these teeth.

The metal used is "Stag" brand manganese steel. As is generally known, this metal is remarkable for its great toughness and unusual ability to resist wear and shock. The use of these renewable point teeth, therefore, assures not only very small loss of time in renewing the teeth, but also a great reduction in the frequency of the renewals, on account of their superior wearing qualities; all of which means lower maintenance cost and greater efficiency.—Advertisement.



PANAMA TOOTH

DRUMMOND END FLIGHT.

In the handling of cement products, ashes, or other abrasive materials, with screw conveyor, delays and expense are caused by the necessity for renewals, because at each journal bearing where the flights are discontinued there is an obstruction offered to the flow of the material along the trough by the journal bearing support or hanger, and the interruption of the conveying spiral at that point. This tends to accumulate material and imposes extra work on the end-flight in pushing it past the bearing into the path of the next section.

Experience shows that this extra work wears away the end of the delivery flight and its outer edges, until the accumulation extends back farther and farther from the bearing, thus losing efficiency for the conveyor and finally forcing the renewal of the whole section.

The end-flights may be practically worn away, while the rest of the conveyor may show but little wear.

Heretofore when a coupling gudgeon wore down and needed renewal, it required considerable work to remove and replace the old gudgeon and the shut-downs necessary for renewals of conveyor sec-

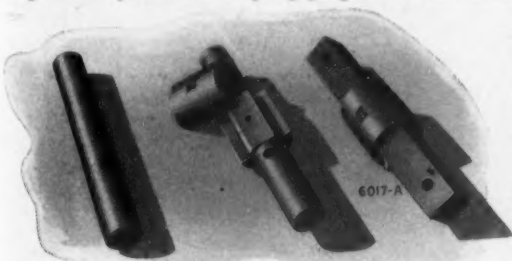


THE RESULTS OF WEAR AFTER THREE WEEKS' SERVICE
In handling cement clinker with $\frac{3}{4}$ " standard reinforced steel flights.

tions and coupling gudgeons, caused serious interruptions.

The Drummond End-Flight is the invention of the late D. D. Drummond, vice-president and general manager of the Chicago Portland Cement Co., and widely known as one of the ablest engineers in the cement industry.

Mr. Drummond's invention has overcome the difficulties heretofore experienced, by making renewals easy, and furnishing end-flights made of material which is high in wear-resisting properties. The end-flight, generally made of manganese or other hard and tough steel, has a center or hub whose recess is large enough at one side to receive the end of the conveyor shaft or pipe, and small enough at the other side to fit the end of the coupling gudgeon. The adjacent gudgeon ends of the two end-flights are provided with removable caps which permit the coupling gudgeon or the end



THREE TYPES OF COUPLING GUDGEONS.

flights to be taken out or replaced without disturbing the rest of the conveyor. As the end-flights are secured to the gudgeons and to the conveyor shafts or pipes by bolts, it is a simple matter to make renewals when necessary.

Careful measurement shows only $\frac{1}{4}$ " wear on the outer edges (or $\frac{1}{2}$ " in total diameter). The delivery end of the flight is worn thinner, but is still intact, and the opposite end has full thickness.

The one at the right being a square bar supplied with a round sleeve at the center (in two parts bolted together) to revolve in the hanger bearing. The center gudgeon has the same construction except that the ends are turned round, and the upper half of the split sleeve is shown removed to one side. The gudgeon on the left is a plain round piece of shaft, with bolt holes drilled for attaching the end-flights.

The Link-Belt Company, Chicago, and with offices in all the principal cities in the United States, are the manufacturers and sole agents of the Drummond End-Flight. Prices furnished upon application.—Advertisement.

NEW SEXTON MIXER.

A new batch mixer has just been placed on the market by George L. Sexton, of Milwaukee, Wis. It is called the "Sexton Jr.," and is designed to suit the needs of building material dealers and contractors who do not find it necessary to invest in a mixer of a larger type.

The new Sexton Jr. batch mixer is distinguished from the ordinary type in that the mixing gear is placed directly above the engine pulley and is connected with it in the most direct manner, which prevents any loss in power through lost motion.

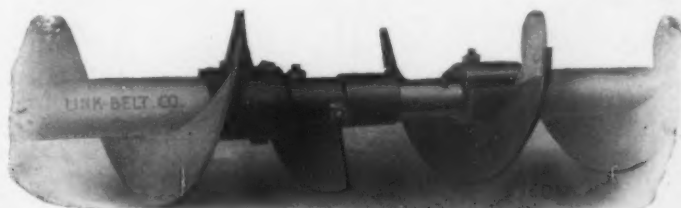
The new Sexton Jr. can easily turn out 35 cubic yards of concrete a day. It is operated with a friction drive and is simple in construction, and can be run with great economy. It contains few parts and is not likely to get out of order. Those interested may secure more information by writing to Sexton, Inc., Milwaukee, Wis.

The Akron Plaster Board Company of Akron, Erie Co., New York, has been incorporated to manufacture and deal in plaster board, etc., with capital stock of \$30,000. The incorporators are: Robert C. Rose, Akron, Erie Co., N. Y.; George J. Ralph, Erie Co., N. Y., and George McKay, Caledonia, N. Y.



DRUMMOND END-FLIGHT WITH CAP REMOVED.

One of the mammoth pieces of construction in which the use of cement is the dominant factor is the big dam across the Father of Waters at Keokuk, Iowa. It will be an engineering triumph in which approximately 700,000 barrels of cement will have been used. The Atlas Portland Cement Company, of New York City, is the exclusive source of supply.



DRUMMOND END-FLIGHTS WITH COUPLING GUDGEON ASSEMBLED COMPLETE.

FIRE TEST REPORT READY.

H. B. McMaster, commissioner of the Publicity Bureau of the Associated Metal Lath Manufacturers, of Youngstown, Ohio, informs us that printed copies of the official report made to City Building Inspector V. D. Allen, of Cleveland, Ohio, by the committee which he had appointed to conduct comparative fire tests on partitions, fully illustrated, is ready for distribution.

The report constitutes exhaustive study on the subject of fire stresses upon partitions of every type of construction, and from the viewpoint of professional men who have seen this official report, it is claimed to be a document of considerable value. The report was presented in full with stereopticon views at the convention of the National Cement Users' Association at Pittsburgh, and was one of the features of that convention of permanent value.

At the recent convention of the Illinois Society of Engineers and Surveyors held in Chicago, a few days ago, a great part of the discussion related to the fireproofing of all buildings erected in Chicago, and new ordinances will be submitted with this end in view.

The National Mortar and Supply Company, at Gibsonburg, Ohio, has just completed 10 additional kilns at its plant, and will increase its hydrating capacity accordingly.

ADVERTISING THAT PULLS BUSINESS.

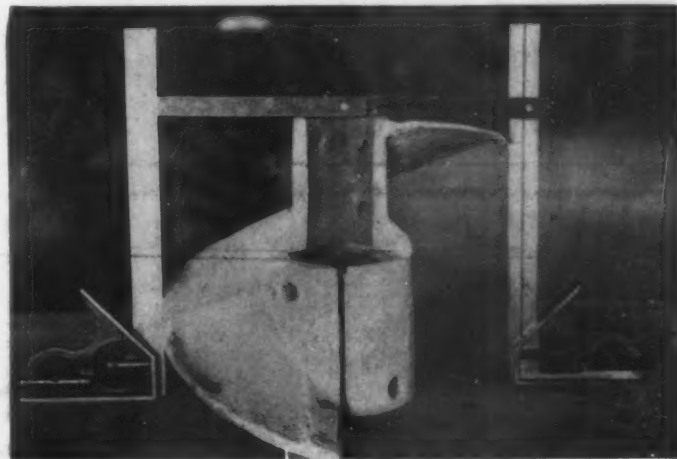
If there is one thing on earth that a quitter should leave severely alone it is advertising. To make a success of advertising one must be prepared to stick to it like a barnacle on a boat's bottom. Advertising doesn't jerk—it pulls. It begins very gently at first, but the pull is steady. It is likened to a team pulling a heavy load. A thousand spasmodic, jerky pulls will not bulge that load, while one-half the power in steady effort will start it and keep it moving.—John Wanamaker.

TO OPERATE LIME WORKS.

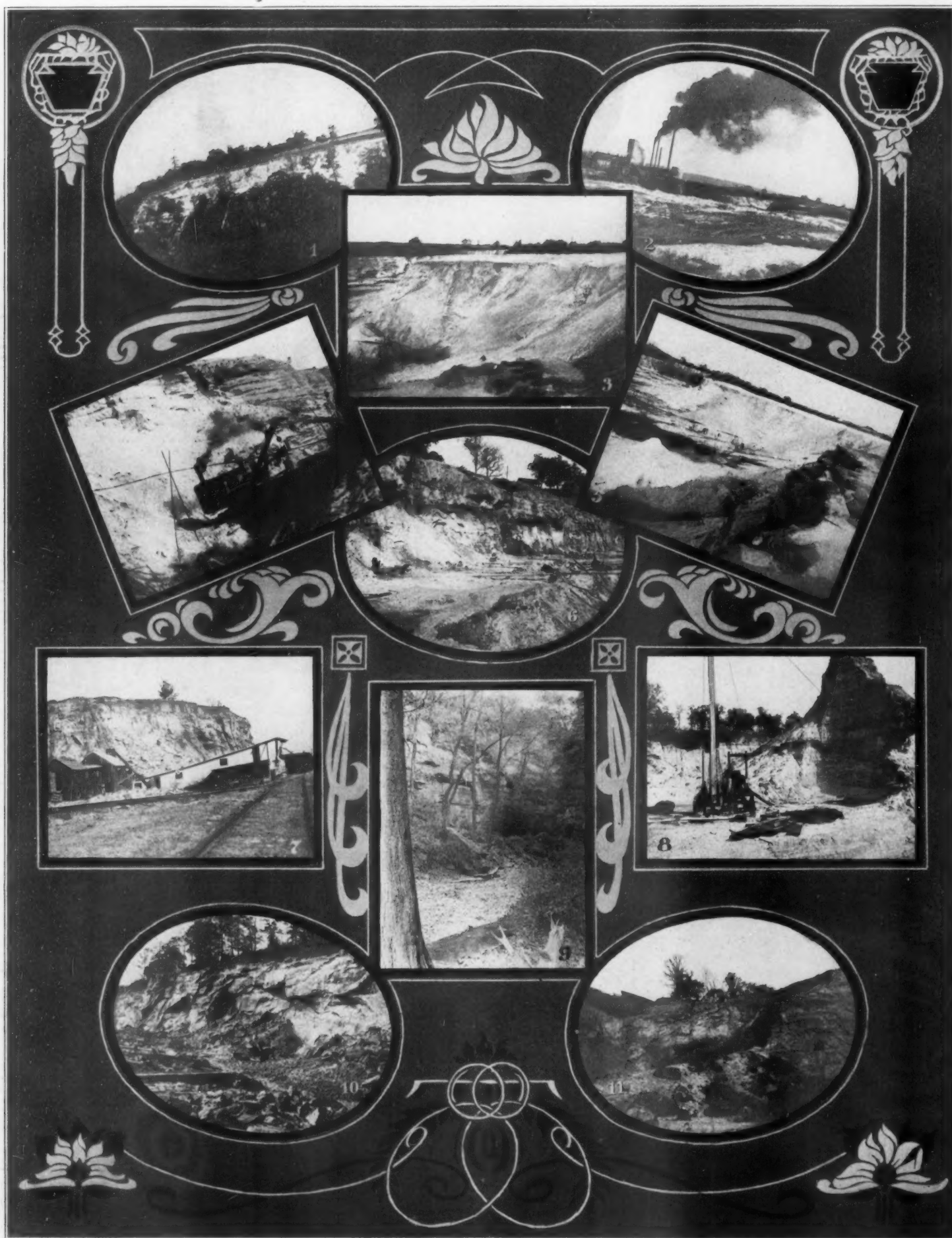
A. M. Blowers, of Pineville, Ky., a member of the Blowers & Moody Real Estate Company, of St. Petersburg, Fla., has organized a company which will operate a large lime works near Kendrick, Fla. The kilns will be modern in every particular and a large rotary hydrating machine will be installed which will pulverize the lime and make it ready for shipment in heavy paper bags. A very high grade of lime has been found on Mr. Blowers' property, and the new plant when completed will be one of the largest and best equipped plants in the state.

The German government is preparing a new potash bill designed to restrict production, according to a statement made by Clemens Delbrück, Minister of the Interior, at the meeting of the Budget Committee of the Imperial Parliament. The measure will probably be brought in before the termination of the present session.

The Goodwin Manufacturing Company, of Indianapolis, Ind., has been incorporated with capital stock of \$10,000, to manufacture cement machinery. The incorporators are H. F. Goodwin, Joseph Fitzgerald, and L. Goodwin.



A DRUMMOND END-FLIGHT AFTER SIX MONTHS OF THE SAME SERVICE
which wore out the $\frac{3}{4}$ " steel flights in three weeks.



OTTAWA SILICA SAND DISTRICT.

NO. 1. HIGBY SILICA CO.; NO. 2. OTTAWA SILICA CO.; NO. 3. OTTAWA SILICA CO.; NO. 4. UTICA FIRE SAND CO.; NO. 5. OTTAWA SILICA CO.; NO. 6. BENSON BROS.; NO. 7. ILLINOIS VALLEY SAND CO.; NO. 8. BELGOOD BROS.; NO. 9. IN AN ABANDONED PIT; NO. 10. BENSON BROS.; NO. 11. IN THE REYNOLDS PIT.

THE OTTAWA SILICA SAND DISTRICT.

When the Creator laid out the country along the Illinois River, he supplied it apparently with materials for all ages to come, for in addition to the coal veins here we found an inexhaustible supply of silica both for glass making and for use in furnaces. It was in the neighborhood of Ottawa that the first discovery of coal was made on the American continent. The first mention of coal is given in the record of Father Hennepin, and so far as known there is no previous record. He spoke of a mine in the neighborhood of where Ottawa now stands.

The silica district extends from Ottawa to Utica, a distance of seven miles on each side of the river. The river seems to be a natural dividing line between two qualities of sand. On the north side the silica is of a character that is adapted for furnaces, containing the natural binder, which more properly speaking is magnesia. On the other side of the river the silica is free of magnesia, and therefore is adapted for glass making. A visit to the Ottawa-Utica silica district is not one of ease, because in order to visit each of the sand pits it is necessary to tramp down the Rock Island Railway tracks which skirt the river. Formation from which this silica is obtained is known as the St. Peter Sandstone formation, and is said by geologists to be as old or older than the glacial legend. The district is one filled with romance and story. At the southern, or Utica end, Starved Rock stands as a sentinel as if guarding the place, while still a little further south is the stupendous statue of Black Hawk standing on an immense rock. It was erected by Lorado Taft. The story of Starved Rock is familiar to every Illinois school boy and girl. The rock is of this same St. Peter sandstone, and most picturesque in appearance. It was on this rock that a gallant band of Indians withstood a siege until they starved, rather than give up to the enemy. This was in comparatively modern times.

The sandstone cliffs, rich in their commercial possibilities, present a most beautiful appearance to the traveler along the river, rising to a height of 90 to 100 feet, in some places their white surfaces and in some cases yellow, with all the intervening shades gleaming in the sun.

Just outside the limits of the city of Ottawa where the Ottawa Silica Co., has removed the top earth from the sandstone to prepare for the winter's work of removing the silica, a most interesting sight is to be seen. The workmen removed about five acres of top earth which was four feet thick, a formation of soil that has been accumulating there ever since the glacier finished its work. This soil was all removed and the surface of the stone beneath swept clean over the entire area, running from a southwesterly direction to the northeast. They found a path made by human feet, some of the foot prints are of large men, others a little smaller are those of women, and still others quite small are those of children. These foot prints were made, it is estimated, more than 40,000 years ago and are said by some to be the oldest marks of the human race on the earth surface. When the people whose foot prints are seen there on this stone today walked across that place the Egyptian Empire had not been born; Babylon was not in existence; Greece was undreamed of; the Roman Empire was still a thing of the future; it was in the days when men were so low down in the scale of intelligence that they had no weapons, no fire, and seized their prey among the wild animals with their naked hands. Some idea of the age of these foot prints, which will soon be obliterated as the shovels and blasts of the quarry reach them, is indicated by the presence on the same surface of pieces of native copper brought down by the ice from what is now northern Michigan. Right near by was a great boulder of granite, at the end of a furrow plowed by it as it was pushed along by the ice of the glaciers. These foot prints were made in the same period and at a time before the material had assumed the form of rock. This is only one of the many interesting things that are to be seen in this district.

The various companies of the district ship out each day of the year a total of 125 cars of silica. It is shipped as far east as West Virginia and as far west as California.

The Ottawa Silica Company's plant, where the purest product ever seen by the human eye is turned out, is a model institution in every way. The raw silica is obtained by hydraulic process, that is, the projection of a jet of water against the soft sandstone which is disintegrated thereby and is sucked up through a pipe by pumping into the plant, where it goes through all the various processes of drying, washing, grinding in various grades for the various uses to which it is adapted. The Ottawa Silica Company has long been noted for the high quality of the product that it furnishes. It owns a large area of land in which the same

sandstone is to be found, and is at present operating two units.

The United States Silica Company also maintains an up-to-date plant nearby.

Just below Ottawa on the north side of the river is the silica pit of Benson Bros., where men were found busily at work getting out a product of beautiful quality.

The Illinois Valley Silica Company maintains a pit further south where a huge steam shovel is utilized to load the cars. The next pit down the line is that of P. H. Clark, while the next in order is that of the Belrose Sand Company, presided over by H. W. and F. C. Belrose. Here are seen in the face of the quarry a 12-foot vein of pure magnesia. The magnesia was scraped out and mixed with the silica in the proportions of 35 magnesia and 65 silica, a combination that is required by the National Malleable Iron Works in the manufacture of cores.

The next in order is the Higby Silica Company pit, while further down are the two pits of the Utica Firesand Company and the Reynolds & Carey pits.

The supply of this silica is for all practical purposes inexhaustible, for although great quantities of it are shipped out each day, the lessening of the supply is hardly noticeable. It is not known how far under the banks the formation extends, but tests that have been made have shown that it is a number of miles south and a number of miles north of the river.

MARKING AND KEEPING TRACK OF TOOLS.

The expense account for tools and other apparatus and supplies put into the hands of workmen can be lessened by a systematic method of keeping track of them.

Many of the larger employers have adopted such a plan with excellent results, but comparatively few of those who employ a limited number of men have thought it worth while, as they look upon it as being too much red tape to bother with it in a moderate sized business.

There is no red tape about it, and so little time involved as to be scarcely worth mentioning. It is simply one of the methodical things that enter into the economical administration of business, and is just as important to a small business as to a large one.

In any business where tools and apparatus of one kind and another is put into the hands of ordinary workmen there are two things in particular to guard against. First, careless handling and a tendency to leave things lying around. Second, the always present danger of theft, sometimes on the part of dishonest employees, and sometimes idle characters who stray in for no especial purpose, but who are always ready to appropriate property they can carry off and either sell or make use of.

Those who carry out the plan in full, charge tools and other supplies to their men at the time they are put into their hands, and give them credit for them when they are returned. When a man knows that he will be held responsible for a tool, or anything that is put into his hands to work with he is more careful in its use, and can be depended upon to return it to its proper place when he is through with it. The plan, when it has been put in practice and properly kept up, effects a saving anywhere from 10 to 25 per cent in the tool and supply account.

But whether a regular account of this kind is kept up or not, all tools should be plainly marked with the owner's name. Metal tools are stamped and tools with wooden handles should have the owner's name branded on them. This marking of tools also protects against their getting mixed with those belonging to another firm.

TREE DENTISTRY.

In an article on tree surgery in the American City, E. M. Swiggett, superintendent of parks, Utica, N. Y., writes of the use of concrete in tree dentistry as follows: All cavities in a tree, large or small, should be carefully scraped out, treated with creosote, and finally filled entirely with concrete at the opening and as far up the trunk—if the cavity is in the trunk—as conditions will permit. The edges of large cavities are sometimes squared off and the concrete put on in such a way as to remind one of the way a dentist fills a tooth. This has led to the term, now in common use, "tree dentistry." Where the concrete cannot be made to stay in place, sheet iron may be cut to neat dimensions and tacked over the filled cavity, after which the entire spot should be painted with either light green or dark slate-colored paint.

(Continued from page 24.)

steel cabinets, which go to show how closely the owners follow the requirements of the underwriters. The track shed is equipped with rolling steel doors and the underwriters positively require that no car be allowed to remain in the track shed over night. The spouting all consists of sheet metal and the roof covering generally consists of five-ply tar, felt and gravel, laid according to "Barretts" specifications. All reinforcing steel is medium open hearth and must conform to the manufacturers' standard specifications. Plain round bars are generally used for the foundations, cupola, etc., but for the tanks the horizontal reinforcement consists of flats, the vertical reinforcing being plain round bars.

METHODS OF CONSTRUCTION.

The equipment for handling concrete in the modern elevator differs very little from the methods used in placing concrete in any other building, with the exception of the forms, in which great advancement has been made in the last few years, the forms for the foundation of course being stationary, but all forms above the foundations are movable. These forms are made of 2-inch plank, surfaced on one side and two edges, and the form over all is about 4 feet 6 inches in height. After the foundation has been completed these forms are set over the whole area and filled with concrete in layers of about 8 inches thickness. The raising of these forms is accomplished by a series of jacks in which there are from six to eight on each tank, or if they are used on straight walls they are placed about five or six feet apart. These jacks are set in a yoke which is a framework of steel and is connected to the wooden forms. Through each jack there is a jacking rod about 1 inch in diameter running vertically. To operate the jacks a bar is placed in the socket causing a screw to turn, which if turned to the right lifts the forms and if turned to the left the jack itself climbs the jacking rod while the forms remain stationary, being supported by two adjacent jacks. By reason of the rod passing through the jack the load is applied concentrically and leaves no tendency for the forms to bind. These jacking rods are placed directly on top of each other and no dismantling of the forms is required when additional rods are added. These yokes are connected by means of trusses and this in turn supports the temporary floor for the convenience of the working men and permits easier handling of material. This continual moving of forms does away with the horizontal rings and dislocations so often to be seen in the first concrete elevators. This type of form also has greatly reduced the cost over the stationary forms used originally or the primitive jacking system first adopted, which was accomplished by jacking from the ground all the way to the top of the elevator. James Stewart & Company and the Canadian Stewart Company, Limited, own and control the patents on what is considered the most approved and up-to-date jack on the market.

In the working house the girders where required for floors are poured simultaneously with the walls, the floor slab generally being put in later. This is done so as not to impede the progress of the wall forms. In reinforcing the tanks flat bars are used, being placed midway between the forms and at equal intervals, the difference in pressure below and above being taken care of by the size of the flat. The jacking rod on which the forms are raised is also part of the vertical reinforcing and similar rods placed between the series of jacking rods form the balance of the vertical reinforcing. The tanks are always laid out in parallel rows. Contacts must be provided for, and this is generally arranged by a system of horizontal anchors and additional concrete in the interstices. This arrangement of bins leaves the space between the different tanks, which is called an interstice bin.

As the elevator is usually placed on the water front and as its elevator boot tanks and receiving pits are necessarily some distance below grade, there is generally waterproofing to be taken into account. This is usually accomplished by means of the membrane system of waterproofing.

In regard to the balance of the construction, it is so nearly allied to other branches of reinforced concrete building that it is needless to go into further details.

In conclusion, it is fair to add, we think, that the modern elevator has been and will continue to be a great factor in the upbuilding of our great Northwest and also Western Canada and in conjunction with the railroads the elevator has been responsible for the steady crop increase, until it is safe to predict that in the next half a decade the wheat crop of Canada alone will exceed 600,000,000 bushels per annum.

The new crushing plant of the Limestone Products Company, Chattanooga, Tenn., located at the foot of Lookout mountain on the N. C. & St. L. railway, is now in operation. This is said to be the most modern plant of its kind in the country, and its capacity is great. The plant is operated by electricity furnished by the East Tennessee Power Company, and General Electric motors are used. Drilling is done by compressed air.

The plant is of very substantial construction throughout and the rock storage bins have a capacity of 600 tons. The initial crusher is a No. 7½ McCully, and the company plans to install immediately a No. 4 auxiliary crusher, which will give the plant a capacity of 500 tons of crushed stone per day of ten hours. The plant has been designed with a view to handling the product as economically as possible. Shipments are made by rail exclusively and the company has its own side track connecting the plant with the main line of the N. C. & St. L. railway.

The limestone quarried by this company is of very superior quality and well adapted to a variety of uses, such as blast furnace flux, railroad ballast, road material, concrete work, roofing and various chemical purposes. The company is now making regular shipments. Mr. Charles A. Shinn is in charge of the sales department.

Montgomery Stone Quarrying Co., Camden, N. J., \$7,500; F. H. Hansell, Camden.

FUTURE WORKS.

The great educational influence of the technical press working with the object lesson produced at the cement shows, have secured the development of models, shapes processes and methods of practice for the use of cement workers and builders of concrete structures which practically cover every possible engineering and architectural requirement. This branch of the practical work has advanced to such a stage of perfection as to leave little more to be desired, it is complete and all the details are well understood and can be had freely by all who have sufficient intelligence to know just what their requirements may be.

The next step in the onward march of progress is to concentrate upon the practical application and employment upon the widest possible scale of universal usefulness the products of Portland cement and of concrete contracting, which from the first has been the prime object of all of the effort and study and capital that has been put into the annual expositions of the cement industry as expressed by the cement shows.

The crowning illustration of completeness is the "cozy home" elevation shown in the Annex of the Coliseum of the Chicago Cement Show. It is entirely a product of Portland cement in all its parts, and demonstrates that foundations, walls, partitions, floors and decorative lines of finish, as well as outside and inside surfacing, are obtainable upon a commercial and competitive basis with all other kinds of materials and methods of construction. It shows further that the five star points of advantage in cement construction are now offered to builders without increasing the first cost, for at a glance one realizes that such a "cozy home" is fireproof, sanitary, comfortable in winter and summer, safe as an investment and with minimum upkeep charges. Thousands of visitors at the cement show see and realize all of these things, and they are profoundly impressed thereby.

Many reliable contractors are looking for this very kind of business and are glad to take on concrete home construction in preference to any other, but the number of concrete specifications do not increase in anything like the proportion that they should, nor in any such measure as would be the case if the prospective home builder was just as free to exercise his selection of concrete as he is in other materials.

The money power associated with other old-time building materials works against the general introduction of concrete as the material for home building, because it is realized that the improvement will be recognized and appreciated and promptly find such wide adoption as to displace great quantities of other materials. Actually there is no such menace, it exists only in the minds of those who want to hog up all the business, without realizing that the growth of concrete in all other lines has helped to augment the business of competitive lines by increasing the volume of investment. In spite of this discrimination which contributes, after all, only a small part of the capital that can and will be attracted by the superior advantages and increased safety of concrete residence construction, still at the present time it is the most active, because closest in touch with the building business as it has been conducted for years.

Lending money on mortgages for building purposes constitutes a large and profitable feature of investment banking, much too large to be held back permanently by the financial influences which surround the opposing building material interests. The very quality of increased safety from fire and permanency of the investment is sure to appeal to the intelligence as well as the conservatism of the progressive element amongst the financiers of such buildings, and then all the flock will follow the leaders, so that it will not take a long time for us to find that only a concrete house can find ready financial accommodation.

No one can reasonably doubt the outcome eventually, but this is the main problem and obstacle that prevents stupendous expansion in the practically limitless field of residence construction at the present day and moment. We are here with the goods, the systems, the methods, the shapes and the technique all worked out to perfection, but the builder can get quicker accommodation if he uses some other material, and that is usually enough to decide the specification against concrete construction.

The concrete house as an investment proposition has got all competition backed off the board. It is not necessary to repeat the details of that argument here, for every visitor at the Coliseum can readily recognize the demonstrations.

Our future work is to open the gates wide for the application of concrete construction into this big field upon a big scale.

DIVIDING THE THING AROUND.

"Last week," said Chamberlain, the hardware man, "I experienced all the emotions that a business man is supposed to have during a life time. Let me tell you about it. You know Stockton, the contractor, of course, and it is Stockton to whom I am indebted for these emotions. He came into my store on Monday last and said 'Chamberlain, I have never given you any business and I have decided I ought to divide this thing around a little.' I thanked him and he gave me an order for a bill of hardware that amounted to \$487.

"Say, but I felt good! He never haggled over the price, and as he was one of the men that I had been trying to sell for three years I bought myself an extra lunch that noon. I felt so good over the sale that I went home in the middle of the afternoon to tell my wife of my good fortune. I might have told her by phone but I could not have expressed myself as I wanted to. Tuesday, Wednesday and Thursday I walked on air. Of course I have sold a good many bills of this size and larger, but when one has tried for three years to get what he considers a good fat account and finally accomplishes what he is after he is bound to feel good.

"Friday morning came and with it a notice that Stockton had failed, and then I had more emotions, and made a bet with myself that I had lost half of that bill. Saturday morning the whole thing came out. According to Stockton's books, and the showing of his assets and liabilities, he

could not pay a fourth of 1 per cent, and I remembered what he said about wanting to 'divide this thing around.' Where I made the mistake was that I did not ask him what he wanted to divide."

EXTENSIVE ENLARGEMENTS.

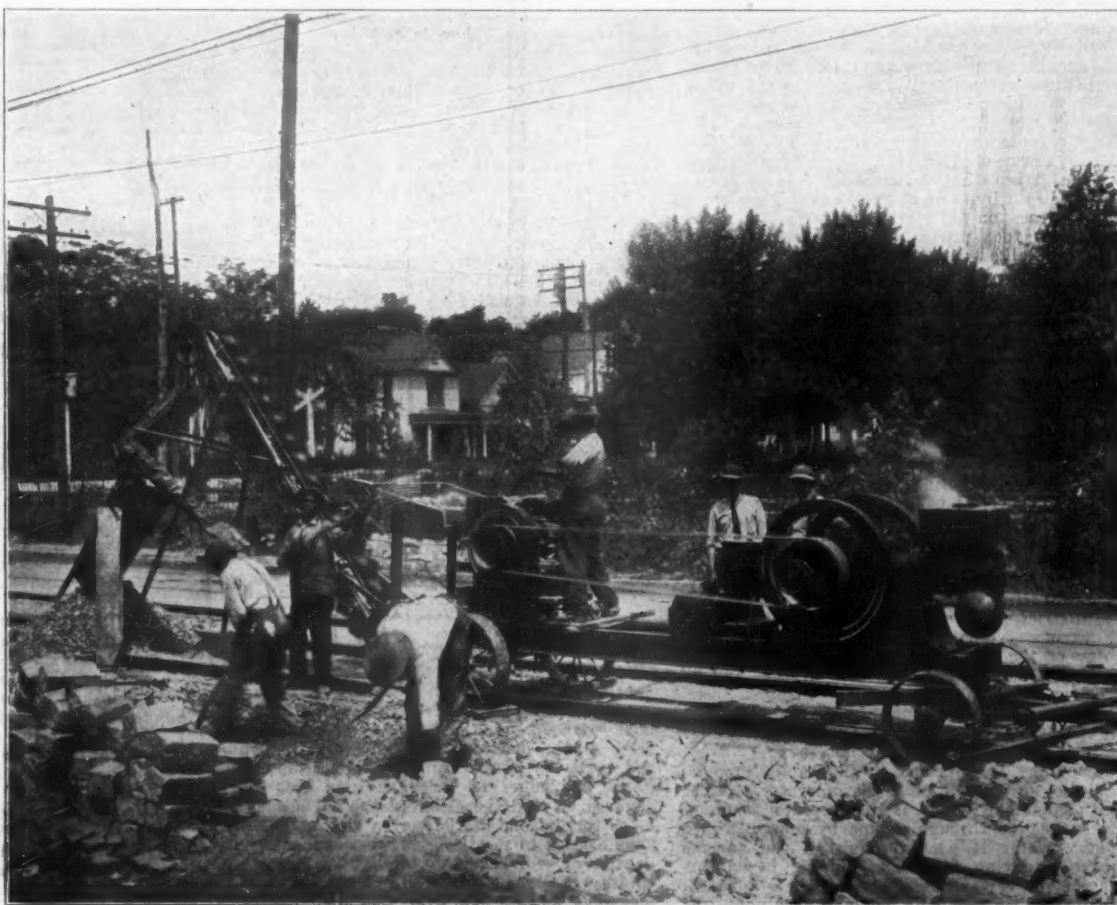
The Ohio & Western Lime Company is constructing 12 new kilns at its Marion plant, 12 at Genoa and 12 at Gibsonburg. This concern is one of the heaviest producers of hydrated lime, having plants in operation at Genoa, Gibsonburg, Luckey, Marion and Huntington. Its Marion hydrating mill is devoted exclusively to the production of hydrated lime for mason's mortar, being specially prepared for this practical purpose.

The Blaw Steel Construction Company, Pittsburg, announces that Herman Nieter, recently general sales manager of the Kennicott Company, Chicago, is now associated with it at its eastern office, 165 Broadway, New York City.

The Alabama Portland Cement Company, of Camden, N. J., has been incorporated with a capital of \$2,000,000. The incorporators: George H. B. Morton and S. C. Seymour of Camden, N. J., and F. R. Hansell of Philadelphia, Pa.

The Middlesex Construction Company, of 145 Albany street, New Brunswick, N. J., has been incorporated with capital of \$10,000 to carry on general construction business. The incorporators are: L. C. Wallach, H. H. Winters and N. P. Winters, all of New Brunswick, N. J.

On January 1, 1913, the well-known Universal Crusher Company of Cedar Rapids, Iowa, manufacturers and patentees of the original Velten Universal crusher, took over the entire sale and control of the line of crushers heretofore manufactured and sold by the Eureka Stone & Ore Crusher Company of Cedar Rapids, Iowa. The Universal company will continue manufacturing both lines at the Eureka plant. This combination means much to the trade that is interested in small and medium sized crushers and will give their customers absolute assurance of being able to buy crushers at medium prices suitable for all their wants.



UNIVERSAL CRUSHER IN OPERATION.

REHABILITATION OF THE ILLINOIS & MICHIGAN CANAL.*

Mr. Bethard, Members and Guests of the Peoria Association of Commerce: It affords me pleasure to tell you of our interest in the plans for the rehabilitation of the Illinois & Michigan Canal.

As is always the case in newly discovered territory, the country immediately bordering the seaboard is first populated. As time goes on, the early settlers find their way into the interior, by means of the country's natural waterways, the rivers, lakes and streams. Trading centers spring up and business is conducted on a fair scale; those engaged in agricultural pursuits inhabit the more remote parts of the country and it then becomes necessary to provide additional means of transportation, not already provided by nature.

In this way, the highway, the railroad and the canal are added and the people continue to spread further afield to points adjoining them.

Now to utilize any one of these means at the sacrifice of another, which is capable of rendering equal and probably better service in given territory, is obviously wrong, yet that is exactly what has happened in the Illinois Valley.

We have, in the state, three waterways linking The Great Lakes with the Mississippi—the Chicago Drainage, the Illinois & Michigan and the Hennepin canals, completed in the years 1900, 1848 and 1907, respectively, yet it was as recent as June of last year that they were, for the first time, utilized for the transportation of freight from Chicago to Mississippi points.

This condition arises from a variety of causes and the most important is probably the indifference with which the Illinois manufacturer has viewed the possibilities offered by these waterways as a means of transporting freight.

The advocacy of a deep channel from the Lakes to the Gulf has also contributed toward their indecision in this matter and lastly the oldest of these waterways, the Illinois & Michigan canal, has fallen into such a state of disrepair as to raise doubt in the minds of many as to the feasibility of economically establishing a barge line over it.

In 1898 the company with which I am identified established a plant at Oglesby, Ill., and our interest in the utility of these waterways at least dates back to the opening of the Hennepin in 1907. In so far as we are concerned, however, other obstacles besides those which I have mentioned, prevented our attempting to use these waterways earlier than we did.

Located as we are, $4\frac{1}{2}$ miles south of La Salle, on the Vermillion river, a tributary of the Illinois river, to use either the Illinois & Michigan canal east, or the Hennepin west, would necessitate the dredging of $1\frac{1}{2}$ miles, the damming of the Vermillion and the removal or the reconstruction of the Chicago, Burlington & Quincy fixed bridge at La Salle, which has for years been an obstruction to navigation on the Illinois river.

In regard to this latter difficulty, however, I understand that a permit has been issued by the Secretary of War for the railroad in question to proceed with the work of reconstructing this bridge, in accordance with plans voluntarily submitted by them, and which will insure to navigation a clearance of 50 feet above low water and a passage of 125 feet wide.

Anticipating favorable action on the part of the Government in this matter, in August of last year an examination of the Vermillion from the La Salle Steamboat basin south to our plant was made. Included in the party were representatives of the La Salle Commercial Association and myself. Soundings were made at intervals and although as low as $3\frac{1}{2}$ feet was registered in some places, with the sanction of the Government for the removal of the chief obstruction, coupled with the fact that we are but a short distance from either of the main waterways, only a relatively small amount of work will now be necessary to otherwise equip this river for barge traffic.

Almost simultaneously with our examination of the Vermillion, an opportunity to test the utility of the Illinois & Michigan canal was offered us and which, needless to remark, was promptly taken advantage of. The Morton Salt Co., whose interest in the Illinois waterways is demonstrated by the activities of their president, who in conducting, under rather adverse conditions, a series of shipments over them from Chicago to Mississippi points, has been largely responsible for the recent statewide interest in this project.

During one of the trips made by the Morton Salt Co., further difficulty was encountered by a break in the Hennepin waterway near Mineral, which drained so much of the water in that particular section as to make navigation impossible and necessitated a three weeks' delay in order to accomplish the work of making repairs. The boat "Peelers" and the barge "Redwing" were at that time en route from Chicago to Davenport with a cargo of salt. Interception of these boats was made at La Salle, at which point they were unloaded and subsequently chartered by us to convey a shipment of cement to Chicago.

This shipment consisted of 980 barrels, aggregating 186 tons, which was about evenly divided between the two boats. They departed from La Salle on the morning of August 24 and without difficulty made the trip to Chicago in four days, seven and a half hours. The same boats were again used by us on September 10 to convey a second cargo of cement, this time consisting of about 200 tons, and the time consumed in the trip was 4 days, $1\frac{1}{2}$ hours, or 6 hours better than the previous experiment.

While these experiments demonstrated to our satisfaction that the Illinois & Michigan canal practically offers the same facilities to the shipper as it did when water transportation was at its height, yet from the standpoint of cost, the venture showed no saving over the present all-rail-rate from Oglesby to Chicago, due first to the fact that our product had to be loaded into cars and conveyed by rail to La Salle, unloaded there and loaded into the boats; secondly, to the small capacity of the boats which must necessarily be used on account of the size of the locks, and thirdly, to the terminal expense incurred at both La Salle and Chicago.

The relative dimensions of the waterways I have mentioned will be of interest to you, inasmuch as the Hennepin canal was so built and is in such condition today as to render its use both practical and profitable to the shipper and in this way, we may have by comparison, a better appreciation of the repairs and improvements necessary, to put the Illinois & Michigan canal in the same serviceable condition.

In 1900 the Chicago Drainage canal was opened, abandonment of that section of the latter. It cost \$52,500,000 to build, has a surface width of 244 feet, is 158 feet at the bottom, a depth of 22 feet and ranks among the world's largest waterways.

The Illinois & Michigan canal, completed in the year 1848, originally provided a direct water route from Chicago to La Salle, a distance of 96 miles. It was 60 feet wide on the surface, 40 feet at the bottom and 6 feet deep, with locks 105x18 feet. It cost approximately \$9,500,000—and which cost, I may mention, was defrayed wholly from the proceeds of the sale of lands adjoining the waterway conditionally donated by the Federal Government to the state for that purpose and from the earnings of the canal itself.

The Hennepin canal completed by the Federal Government in 1907, runs from Bureau, west of La Salle, to the Mississippi river at Rock Island, a distance of 75 miles. It cost \$7,500,000, with a 26-mile feeder, is 82 feet wide on the surface, 52 feet at the bottom, 7 feet deep with locks 170x35 feet.

I desire to emphasize particularly the dimensions of these locks as compared with those on the Illinois & Michigan canal, 104x17 $\frac{1}{2}$ feet, inasmuch as to render this means of transportation economical from a commercial standpoint, it will, in my opinion, be necessary to operate boats, each of a capacity of 300 to 400 tons, and such boats must necessarily be 140 feet long and 17 feet in beam with a draft of about 6 feet.

At the present time the Illinois & Michigan canal is unable to accommodate boats drawing more than 5 feet of water, so that it would have to be dredged and cleaned out to insure a depth uniform with that of the Hennepin 7 feet.

This accomplished, and the size of the locks increased to 170x35 feet, it would be possible for shippers to dispatch over these waterways in one shipment 1,800 to 2,000 tons, by using one powerboat and 5 barges of such dimension as I have just stated.

It also transpires that with the use of larger boats the embankment of the Illinois & Michigan canal would require to be strengthened considerably, to withstand



NORMAN D. FRASER, PRESIDENT CHICAGO PORTLAND CEMENT CO., CHICAGO, ILL.

the "wash" caused by the movement of such vessels at the speed necessary for the success of canal borne traffic.

The engineers who were engaged by the canal commissioners to examine the canal report that these improvements could be undertaken at a cost of approximately \$1,000,000.

To me, this seems to be an infinitesimal amount for the state to spend when we consider that thus far this waterway has not cost the state one cent and that this appropriation would enable the canal commissioners to put it in such condition as to besides render useful for traffic, connect the waterways on either side of it, which have necessarily lain idle owing to the inadequacy of the Illinois & Michigan waterway connecting them and which individually represent an investment of \$7,500,000 and \$52,500,000.

As to the saving in freight rates promised by the improvement and utilization of this waterway, this, in my opinion, will vary with the length of the haul. Two mills per ton mile, including such items as terminal charges, insurance, barge rental and wages of employees, is computed as a fair rate for barge transportation, but in my opinion the Illinois Valley manufacturer would be content with the saving effected between double that estimate and the present railroad rates.

In closing, I want to say that I am very optimistic as to the destiny of the Illinois & Michigan canal. I will admit it is hard to conceive how a waterway, once sufficiently popular among shippers to collect in tolls the sum of \$300,000 in a single season and to carry in a succeeding year more than 1,000,000 tons of freight, should, in later years, become known, and rightfully so, as the "bad pole" ditch, but it is simply another example of the detrimental effect indifference, conflict and doubt have upon the people once they are permitted and encouraged in some source to permeate among them.

The recent government activity in regard to this waterway, as disclosed by letters to the canal commissioners from the attorney general, will, I predict, influence the state legislature toward appropriating the sum named by the engineers engaged by the canal commissioners to estimate the cost of its improvement.

To merely appropriate a smaller sum, necessary to comply with the government ruling, would still deprive the canal of a capacity sufficient to meet modern traffic requirements and which would continue to curb the usefulness of the Hennepin and Drainage waterways. I am, therefore, of the opinion that this opportunity ought to be promptly accepted, in order that the real worth of these waterways, as a means of transportation, may fully accrue to the manufacturers and shippers, who may and will use them.

Another alternative is for the state to abandon the waterway entirely, but such action is hardly possible, inasmuch as it would involve the return of \$5,000,000 in cash and land valued at \$4,000,000, by the state to the Federal Government; whereas but one-ninth of this

amount is all that is required to provide Illinois with a waterway—ample in every respect, for its increasing transportation requirements are capable of developing its numerous industries.

The project as outlined by the canal commissioners is, therefore, well worthy of the interest and the co-operation of every manufacturer and shipper in the state. Interesting, indeed, is the prediction that 2,500,000 tons of freight will move over the canal, in the seasons immediately following the improvements, which would render it capable of conveying that tonnage; and which is quite possible, when we consider what the waterway has done in the past with its very limited capacity—for apart from the surplus revenue which would find its way into the state's treasury, the real significance of this prediction is increased business, not for any one manufacturer nor for any particular body of manufacturers, but for the manufacturers of the state in general.

For our own part once we are assured that the proposed improvements on the Illinois and Michigan canal will be made our plans for the deepening of the Vermillion river will proceed, and the all-water-route to the East and to the West—and to the South on the Illinois river—under consideration will then become economically possible.

* Address by Norman D. Fraser, president Chicago Portland Cement Co., expert in the subject of transportation of heavy merchandise, Chicago and Oglesby, Ill., before the members and guests of the Peoria Association of Commerce, Jefferson hotel, Peoria, January 19, 1913.

NEW INCORPORATIONS.

United States Dredge and Gravel Company, Chicago; capital, \$10,000; general construction and contracting; incorporators, Egbert Robertson, Lazarus Krinsky, Edgar L. George.

Illinois Sand Company, Kankakee, Ill.; capital, \$5,000; manufacturing and dealing in sand and other products and by-products incidental thereto; incorporators, C. B. Sawyer, John H. Craig, J. S. Taylor, Jr.

Middle States Company, Erie, Pa.; capital stock, \$60,000; to acquire sand and stone pits and deal in sandstone.

San Marcos Gravel Company, of San Marcos, Tex.; capital stock, \$10,000; incorporators, C. L. Hopkins, W. P. Rylander, J. M. Cape, all of San Marcos.

Killbuck Silica Sand Company, of Warren, Pa., with chief works to be located in Holmes county, Ohio, to mine and quarry stone and sand, manufacture glass, brick, etc. Authorized capital, \$150,000. Incorporators, W. D. Todd, J. W. Wiggins, J. L. Stone and Rachel Nalon, of Warren, Pa., and G. T. Pryor, of Sheffield, Pa.

The Wyoming Sand and Stone Company, Philadelphia; capital stock, \$175,000; to mine, get, refine and prepare for market sand, gravel, etc.; incorporators, Samuel R. McNeal, Philadelphia; George G. Stiegler, W. M. Poole, Wilmington, Del.

The Shearer & Mayer dragline cableway excavator is thoroughly described in a booklet which may be obtained from Sauerman Bros., agents, Monadnock Block, Chicago, Ill. The pamphlet contains full-page illustrations of various operations in which the excavators are digging gravel from under water, stripping clay beds, loading into cars, digging and conveying gravel from pit to rotary screen, digging and conveying gravel from river bed to gravity screen, dumping gravel on storage pile, dumping clay on spoil banks, delivering sand and gravel direct from pit to washing plant, etc. The booklet will be furnished free by Sauerman Bros., upon application.—Advertisement.

The E. B. & A. L. Stone Company, of San Francisco, Cal., is now taking figures and will place orders in a few days for machinery for a large gravel crushing and washing plant in the wash of Coyote creek, near San Jose, Cal., in preparation of the large amount of road work to be done in that vicinity. The plant will include a steam shovel, jaw crushers, washing and screening equipment. This company has just completed its limestone re-grinding plant on the ocean shore south of San Francisco, which will turn out dust to pass a 200-mesh screen. This material is now largely used to cover new asphalt pavement, and the output is expected to find a ready market locally. The equipment is running in good shape.

We received a call on the 21st from Mr. J. B. Sperry, of the Crystal Sand & Gravel Company, of Battle Creek, Mich. Mr. Sperry reports extensive improvements, including two steam shovels and a substantial addition to his sheds. They are manufacturing brick and blocks for building purposes by the steam and hot air process which reduces the time necessary for manufacturing to a minimum. In this connection they use three kilns. Spring will find them ready to handle their large orders with marked efficiency.

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A big department of the biggest Rubber House in the world is at your service. Use us.



Let us advise the thickness of the cover of the belt for your Conveyor System

The life of the belt depends upon the cover.

When the cover is worn through, the life of the rest of the belt will be short, if the material conveyed is of an abrasive nature.

The cover on the carrying side gets the brunt of this wear. It must be tough and serviceable.

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of the commodity carried, the length of the conveyor, the desired life.

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Tell us about your business and we can tell you the kind of belt that will deliver you the *longest service*, at smallest conveying cost. Get posted on the GOODRICH CONVEYING BELT.

The B. F. Goodrich Company
Akron, Ohio



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Advertisements will be inserted in this section at the following rates:

For one insertion.....25 cents a line
For two insertions.....45 cents a line
For three insertions.....60 cents a line

Eight words of ordinary length make one line.
Heading counts as two lines.
No display except the headings can be admitted.

Remittances should accompany the order. No extra charges for copy of paper containing the advertisement.

EMPLOYEES WANTED

Cooper Wanted—Steady work guaranteed. If interested address Michigan Lime Co., Petoskey, Mich.

EMPLOYMENT WANTED

Wanted—Position as Supt. of stone or slag crushing plant; thoroughly exp. with machinery and handling men; also office and business end; prefer large proposition; at present employed. Address 619, Rock Products.

Wanted—Position as Supt. or Foreman of quarry plant. Have had general experience in quarrying and crushing stone. Address Box 922, care Rock Products.

QUARRY SUPERINTENDENT AND MANAGER. Of 14 years' experience in operating and managing large quarries. At present position past four years as superintendent of quarry producing 1,000 to 1,300 tons crushed stone per day. Thorough knowledge steam shovels, crushers, and dinkies. An expert on drilling and blasting. Open for position March 1. Address E. F., care Rock Products.

Wanted—Position as superintendent or builder of lime plant. Address "Long Experienced," care Rock Products.

POSITION WANTED.

Practical Lime Burner wishes position as Manager or Head Burner; used to handling men. Familiar with coal, wood, use of steam. Also Eldred Process. Can furnish No. 1 reference. Address Box 920, care Rock Products.

Wanted—Position as superintendent quarrying and crushing plant, 31 years old, grew up in the business, best credentials. Am efficiency expert, not bulldozing boss. A. B. Henson, 2618 Bellefontaine Ave., Kansas City, Mo.

CEMENT MACHINERY SALESMAN.

Young man (30) who knows the business, with selling experience, would like position with cement machinery house. Address X. Y. Z., care Rock Products.

MACHINERY WANTED

Wanted—Second hand Meriman Gang Saw, about 8x6x3 feet high with Hurst frame and Pitman complete. Give full description and lowest cash price.

EUREKA RUBBING STONE CO., Chicago, Ill.

Wanted—One second-hand Vertical 30" or 36" Sturtevant Emery Mill. Address Frank Orth, Indiana Harbor, Ind.

CABLE EXCAVATOR AND AERIAL TRAMWAY WANTED.

Cable excavator using orange peel bucket, having 500 to 900 ft. span, complete or without power plant; must be in good condition; send details.

Also 1,200-foot aerial tramway with capacity for handling a maximum of twenty-five cubic yards per hour, gravity haul, no power required. Address Marl Products Co., Barton, Vermont.

MACHINERY FOR SALE

For Sale—Jaw Crusher, size 12x20, and set extra jaw plates, Manganese Steel. This Crusher has not run more than three months. Reason for selling, installing larger one. Address Greenville Silica Co., Greenville, Pa.

For Sale—Bargain: 1 No. 1 Rotary Crusher, used only two weeks; 1 9"x18" 3 High Allis Chalmers Rolls, never taken out of original shipping crates; 1 lot of Nestor Belting, not up to our specifications. The Kritzer Company, Chicago.

FOR SALE OR HIRE.

Crushed stone plant located in the thriving city of Columbia, S. C. Capacity about 400 tons per day. Good opportunity. Address CAROLINA CRUSHED STONE CO., Charleston, S. C.

FOR SALE CHEAP TO QUICK BUYER

1—40 H. P. Pierce Crouch Gas Engine with Gasometer & Batteries.
1—Mossor Rotary Crusher.
1—30" Griffin Mill.
2—35 foot Iron Elevators.
1—Cyclone Dust Condensor.
Shafting, Hangers, Clutch and other Pulleys, Sprocket Chains and Wheels, Belting, Etc.
Houston Brothers Company, 32nd Street & Penna. R. R., Pittsburgh, Penna.

PLANT FOR SALE

Plant for Sale—An old and established lime business. Three kilns in excellent condition, two of them modern steel pattern. Plant is fully equipped for hydrating. Largest railroad center in northern Iowa. Mason City Lime & Cement Co., Mason City, Iowa.

For Sale—Entire property and holdings consisting of ninety acres land with inexhaustible supply lime rock. Plant well equipped for getting out rock and manufacturing it into both raw and burnt lime; all necessary kilns and machinery. Capacity 50 to 100 tons per day. Located in heart of agricultural section and has no close competitors. Will gladly furnish information to parties interested. Address Box 921, care Rock Products.

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For Sale—Several tracts of high grade limestone. Splendid location on water and railroad, suitable for flux, lime, cement, or for investment as prices are right. Herman Besser, Alpena, Michigan.

EXCLUSIVE CONTROL GIVEN.

Under our confidential trade note formulas and processes for the manufacture of concrete marble, decorative concrete, marble lumber, composition flooring, etc., by city, county or state licenses or by shop right license. No machinery required. Little capital, practically as yet. No competition. A profitable business proposition. For particulars address Art Stone Co., Box C, Waynesboro, Pa.

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Steam Shovels, Locomotives, Cranes, Rails, Cars, Cableways, Air Compressors, Stone Crushers, Etc.
First-Class Released Material
at the Right Prices.

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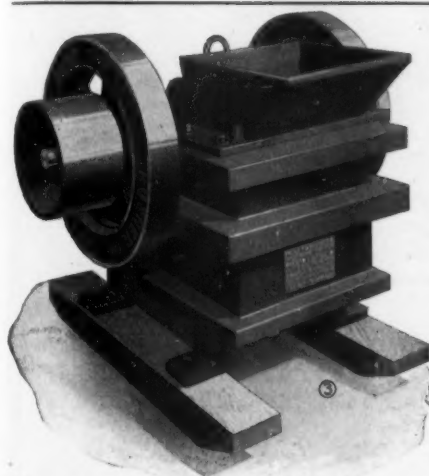
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CULVERT FORM (Steel)
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This Space?As
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3 1/2"**UNIVERSAL "FORCE FEED" CRUSHER**As
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We build 12 different sizes of crushers. Adjusted for all kinds of material. Capacity from 5 to 300 tons per 10 hours. State under what guarantee and terms we could get your order. You need a "UNIVERSAL"—the best machine to take care of your rejection. Let us prove it to you. Catalogue, folder and information promptly given. Write to

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Design of Portland Cement, Stone Crushing
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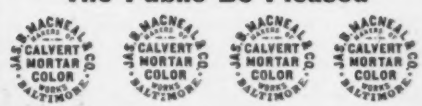
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Brown, Black, Red and Buff
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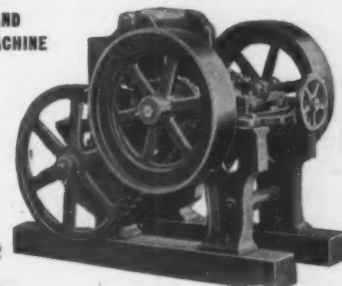
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BALTIMORE, MARYLANDPlease address all correspondence to our Main
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IN 4 SIZESIS A SAND
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Capacity
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Weight 1,800 lbs. 3 Horse Power.Guaranteed and sent on ten days'
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and pay after you have tried it out.Limestone, Lime, Fieldstone, Flint,
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Crushers built in larger sizes also.

Some Bargains in Quarry Equipment

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- One No. 8 Gates Style D Crusher.
- Two No. 7 1/2 McCulley Crushers.
- Two No. 6 McCulley Crushers, manganese fitted.
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All of the above are complete with screens and elevators,
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- 4—No. 4 Champion Jaw Crushers and elevator—portable.

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- Several larger switches and locomotives.
- 2—No. 0 Thew Shovels.
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- 2—45-ton Bucyrus.
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- Several larger shovels of standard makes.

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IT IS

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you missed the treat of your life.

It was kept running continually giving
ACTUAL demonstrations, and the crowds
who witnessed these, pronounced it to be

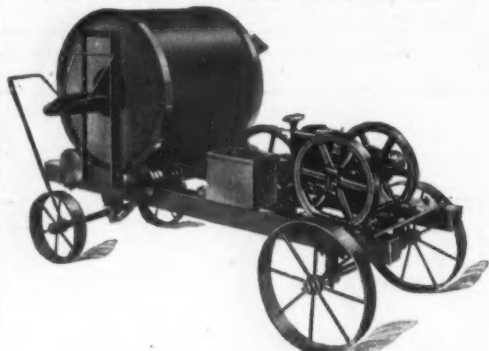
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35 CUBIC YARDS DAILY

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A REAL BATCH MIXER

The simplicity of the friction drive is the one big feature of the "SEXTON JR" the rollers
being flanged travel the machined surfaces of the trackers, which are themselves a part
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The friction drive is not only POSITIVE but means ECONOMY OF OPERATION.

With Power

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"THE SENSATION IN MIXERS"

Tell 'em you saw it in ROCK PRODUCTS

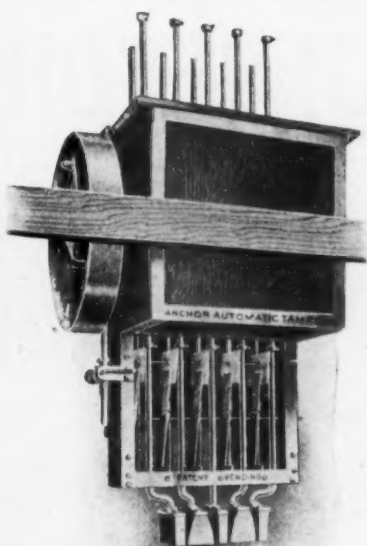
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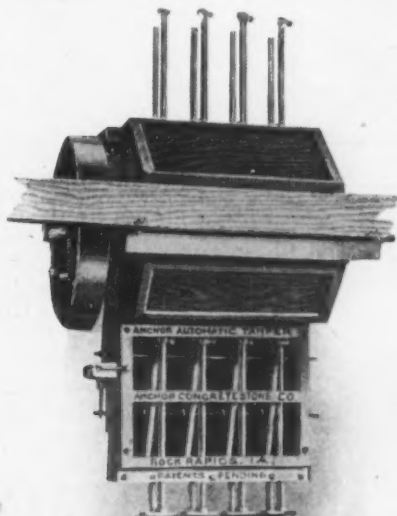
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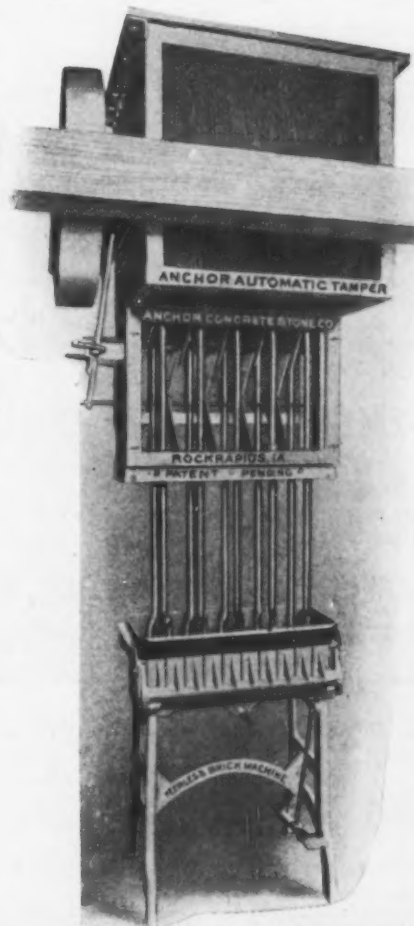
A serviceable adaptable adjustable everlasting tamper that appeals immediately to every concrete block or brick machine owner. This Tamper will treble your output and will save its cost in thirty days. Will produce a block at least 100 per cent better than is possible by hand tamping.



ANCHOR AUTOMATIC TAMPER
working on Ideal or XL
Block Machines.



ANCHOR AUTOMATIC TAMPER
working on the ANCHOR
Block Machine.



ANCHOR AUTOMATIC TAMPER
working on the Peerless
Brick Machine.

Anchor Tamper Facts

- Operates with 1½ H. P. Engine.
- As compared with others it is noiseless.
- Solid steel construction.
- All working parts housed.
- Capacity unlimited, as it requires NO EXTRA TIME to tamp.
- Tamping takes place as the workmen fill the mold.
- Average output per day—from 500 to 700 cement blocks and from 8,000 to 12,000 cement bricks.
- Requires no room in your factory except the space directly above the mold box.
- There is no wear-out to it and no up-keep expense.
- Its 8 tampers strike the concrete 80 600-pound blows per minute, filling all voids and insuring absolute and uniform density.

Anchor Concrete Stone Company
ROCK RAPIDS, IOWA

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On account of the superior construction of the Anchor Automatic Tamper we guarantee our machines to do everything we claim for them. We further guarantee to furnish free of charge any and all parts that may break or wear out for three years from the date of purchase. This guarantee carries all upkeep for a period of three years except for carelessness and accident.

Anchor Block Machine Facts

- Make continuous air-space blocks, frost and moisture proof assuring a dry inner wall without the use of furring strips and lath.
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- Both machines have a very complete equipment, making fractional and corner blocks for each separate width, together with a large variety of face-plates. Either machine will make any desired block for any building.

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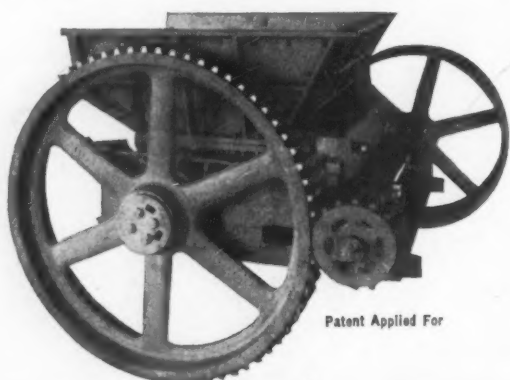
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Please mail me
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descriptive literature
of your block machine
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Tell 'em you saw it in ROCK PRODUCTS



SINGLE ROLL CRUSHERS

For Limestone, Phosphate Rock and Cinder, etc. Any Capacity from 5 to 500 Tons per Hour. More Easily Fed, Makes Less Fines than Either a Jaw or Gyratory Crusher. Information and Prices for the asking.

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Solid Weld Steam Shovel Chain

Every Weld As Strong As the Solid Bar
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Will Not Pull Apart At Welds No Expensive Delays
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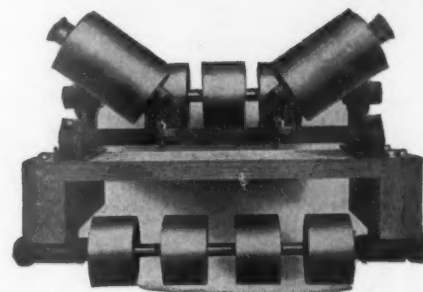
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Columbus, Ohio

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CATALOG No. 34

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ROCK PRODUCTS

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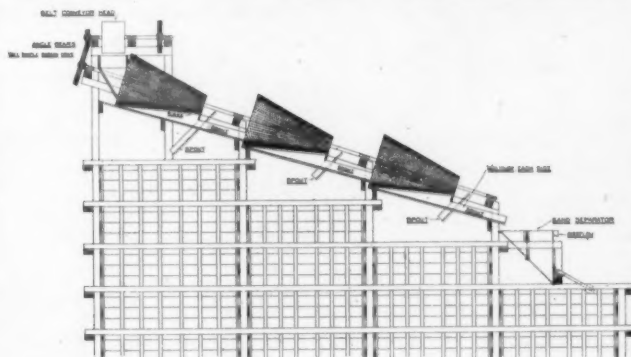
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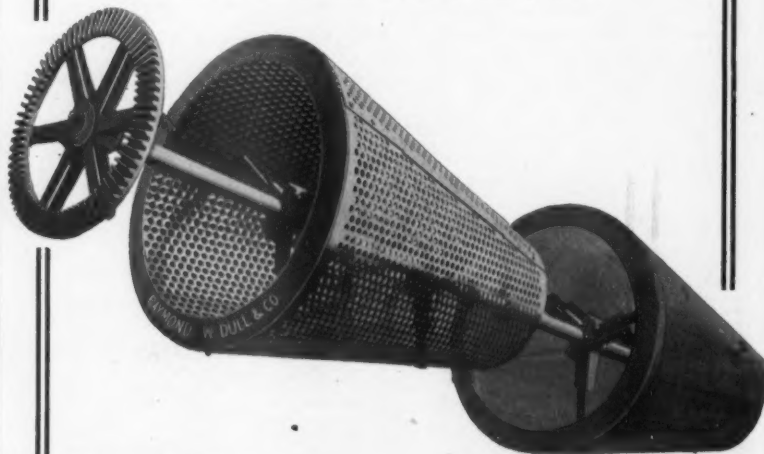
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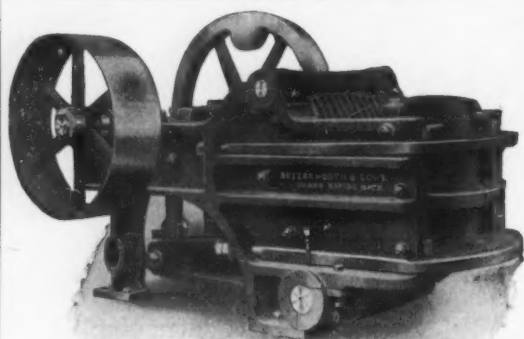
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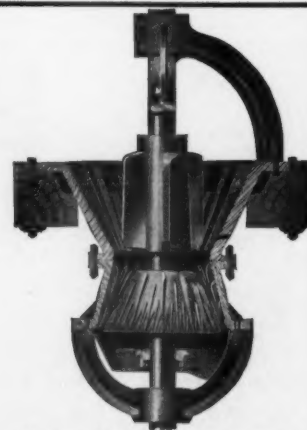
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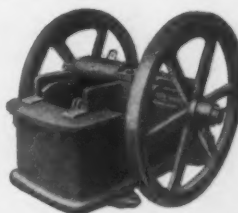
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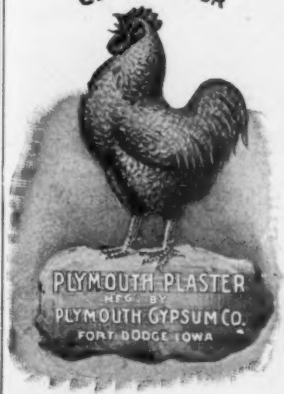


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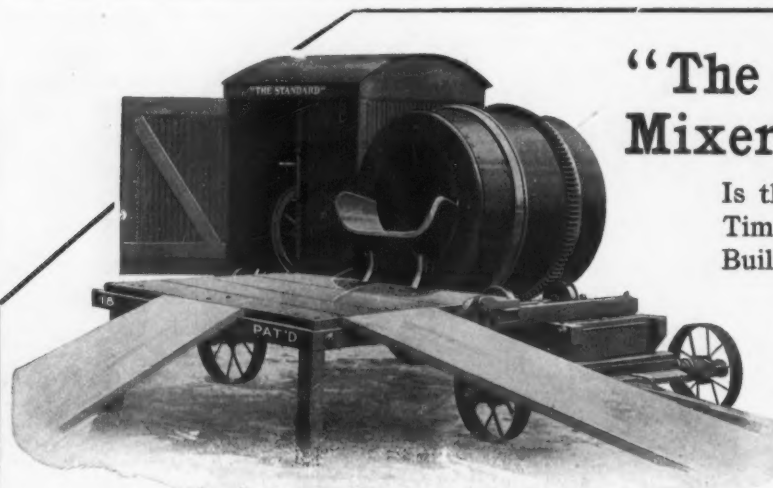
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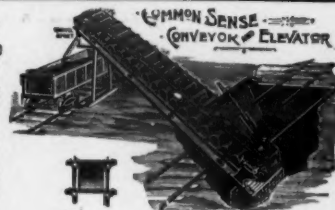
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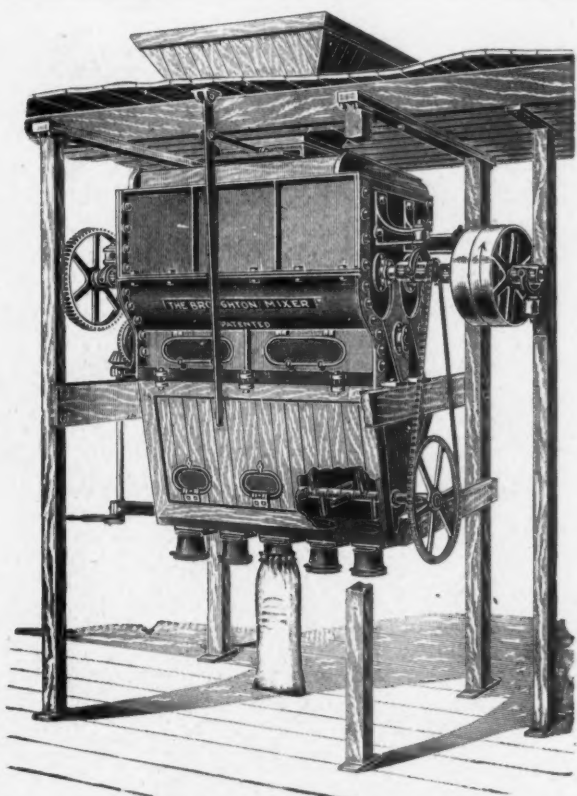
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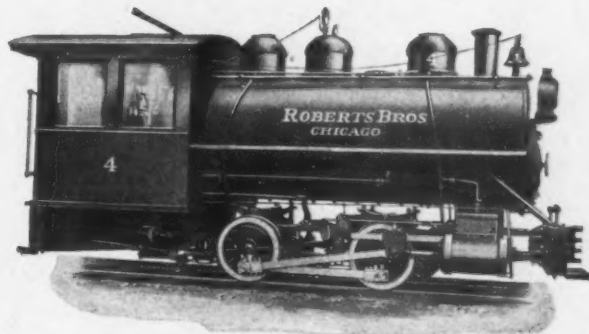




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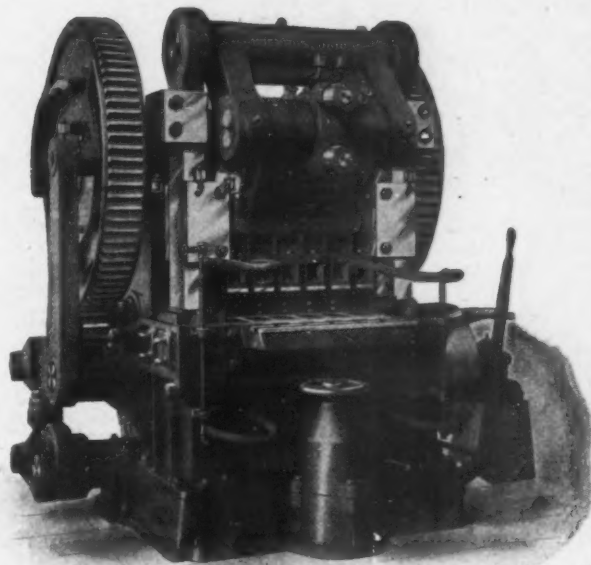
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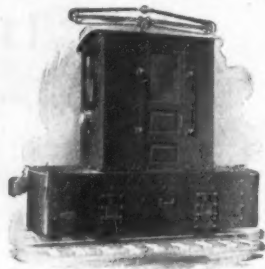
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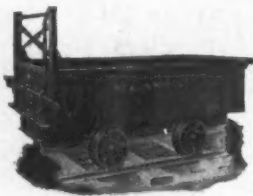
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